OCTOBER, 1934

# COTTON

*Serving the*

## TEXTILE INDUSTRIES

Condor
Compensated BELTS
PAT. APPLIED FOR

**THE LOW TENSION RUBBER BELT**

*with equalized ply stresses*

Condor Compensated Belts are used regularly on every type of textile mill drive. On small pulleys, its remarkable flexibility and compensated plies hold fasteners 3 to 4 times longer than standard belt on the same drive. High starting torques and peak loads far above normal may be safely handled without slip. Condor Compensated is an economical general-purpose textile mill belt; a trial will convince you.

*Sold by leading jobbers*

Condor LINE

| | |
|---|---|
| V-Belt | Fire Hose |
| Flat Belt | Steam Hose |
| Air Hose | Suction Hose |
| Cone Belt | Molded Goods |
| Acid Hose | Oilless Bearings |
| Water Hose | Rubber Lined Tanks |

Rubber Covered Rolls
Industrial Brake Blocks and Lining

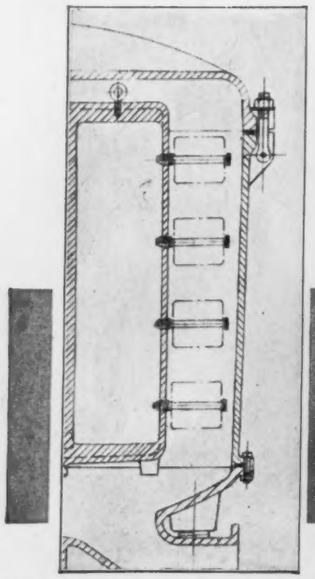
**THE MANHATTAN RUBBER MFG. DIVISION**
OF RAYBESTOS-MANHATTAN, INC.

**EXECUTIVE OFFICES AND FACTORIES, PASSAIC, NEW JERSEY**

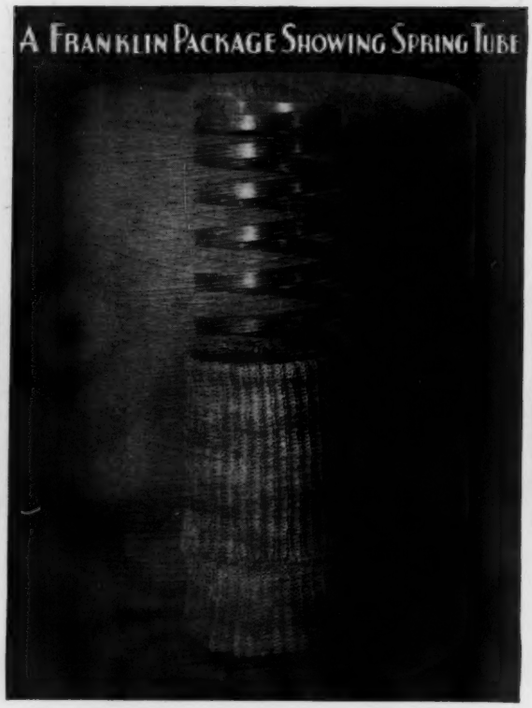

Table of Contents, Page 55

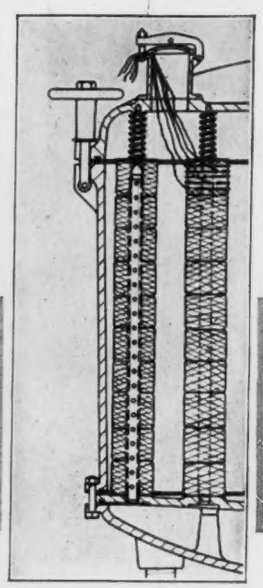
**KNITTING SECTION, PAGE 127**

Advertisers' Index, Page 170



*Only one package to a spindle. . Soft packages get more dye liquor. . Hard packages get less dye liquor. . Result---nueven dyeing.*



*More than one package to a spindle. . Soft packages compress more. . Hard packages compress less. . All packages get same amount of dye liquor. . Result---even dyeing.*

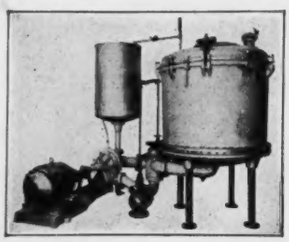
# THE SECRET OF CONSISTENTLY LEVEL SHADES IN PACKAGE DYEING

**WE have heard much of the relative merits of rigid tube package dyeing and Franklin spring tube dyeing. What are the facts?**

**We could redesign Franklin Process Package Dyeing Machines tomorrow, if we desired, to use rigid tubes instead of spring tubes. There is nothing in the patent situation to prevent us, because the rigid tube is at least twenty years older than the Franklin Process. However we hold to spring tube dyeing because of one big advantage that it has over the other method. The Franklin spring tube is the secret of consistently level shades in package dyeing.**

**The Franklin spring compensates for uneven winding. If one package is softer than another it is compressed more when the cover of the machine is clamped in place (the spring permits this compression). The result is that the same amount of dye liquor flows through each package and each package is dyed the same shade.**

**The same can not be truthfully said of rigid tube dyeing, because a rigid tube can not be compressed. If rigid tube packages are not uniformly wound when placed in the dyeing machine, they remain so during the dyeing operation and some get more dye than others.**



**Rigid tube dyeing of course assumes consistently uniform winding, but practical mill men know that there is no such thing.**

**The Franklin spring is only one of many features which have enabled Franklin Process Package Dyeing Machines to make an unparalleled performance record. The most impressive part of this record is the fact that Franklin Process Commission Dyeing Service, using Franklin Process Package Dyeing Machines exclusively, grew from a small experimental station to the largest organization of its kind in the world in approximately ten years. Such progress would have been impossible if Franklin Process machines did not have exceptional merit.**

**Other examples of Franklin Process Package Dyeing machine performance will be furnished on request, also other features which have made this performance possible. The story is told in the booklet, "Franklin Process Package Dyeing Machines." If you wish a copy, write on your business stationery. No obligations.**

PURCHASE ON PERFORMANCE

**FRANKLIN PROCESS COMPANY**
**Manufacturers of Package Yarn Dyeing Machines, Jackspool Dyeing Machines, Worsted Top Dyeing Machines, Wool and Cotton Raw Stock Dyeing Machines and Silk Soaking Machines.**
**PROVIDENCE, R. I., U. S. A.**

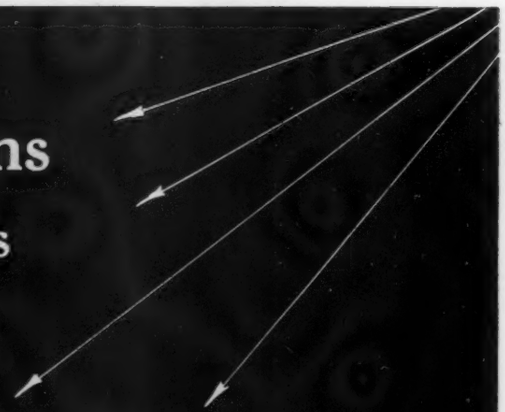
# FRANKLIN PROCESS

## . . PACKAGE DYEING MACHINES . .

COTTON is published monthly by W. R. C. Smith Publishing Co., Dalton and Atlanta, Ga. Subscription Rates, United States and Possessions, $1.00 for one year; $2.00 for three years; Canada, $1.50 per year; Foreign Countries, $2.00 per year. Entered as second-class matter at the postoffice, Dalton, Ga., under the Act of March 3, 1879.

# 2 New Draper Looms

## One for Broad Sheetings
## One for Dobby Weaves



High Speed Looms Now Available for More Weaves
Here is the Draper Record of New Looms Recently Designed to Meet New Conditions

| | |
|---|---|
| 4 Years Ago | X Model High Speed Loom<br>20% More Cloth |
| 2 Years Ago | C Model Shuttle-Changer<br>for Rayons and Fine Cottons<br>R Model Duck Loom |
| This Year | XK Model High Speed Loom<br>for Rayon and Fancy Weaves<br>XL Model High Speed Loom<br>for Broad Sheetings |

**These 2 New Looms are 20% Faster**

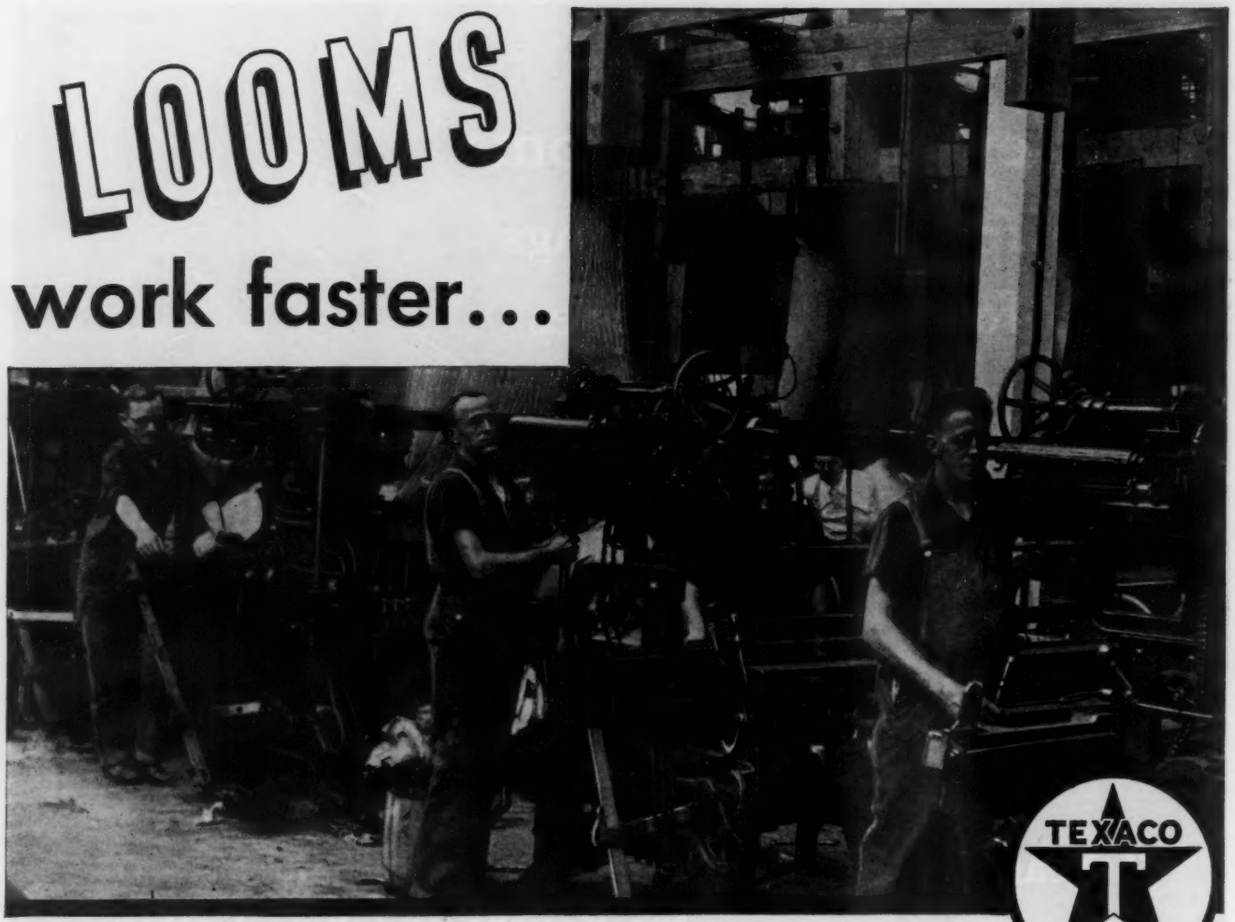
Than the K and L Model Looms They Replace—They Have All the X Model Features with Many Improvements and Special Devices Designed for Their Particular Range of Weaves

DRAPER CORPORATION

Hopedale Massachusetts

Southern Offices Atlanta Ga and Spartanburg S C

# LOOMS work faster...



TEXACO REG. T. M.

## using these *tested* lubricants

Ordinary oils and greases are expensive to use because of what they fail to do. Texaco *tested* Lubricants are economical to use because they help to lower production costs throughout your entire mill. Power saved, lower maintenance and repair expense, reduced spoilage rates, are far more important production items than an initial low price per gallon. Back of their proved performance in other mills, Texaco *tested* Lubricants have Texaco Engineering Service to make sure that they are correctly applied to your own operating requirements.

The chances are that it will boost "profits per yard" to talk to a Texaco Engineer—or write to The Texas Company, about what Texaco can do for you—no obligation.

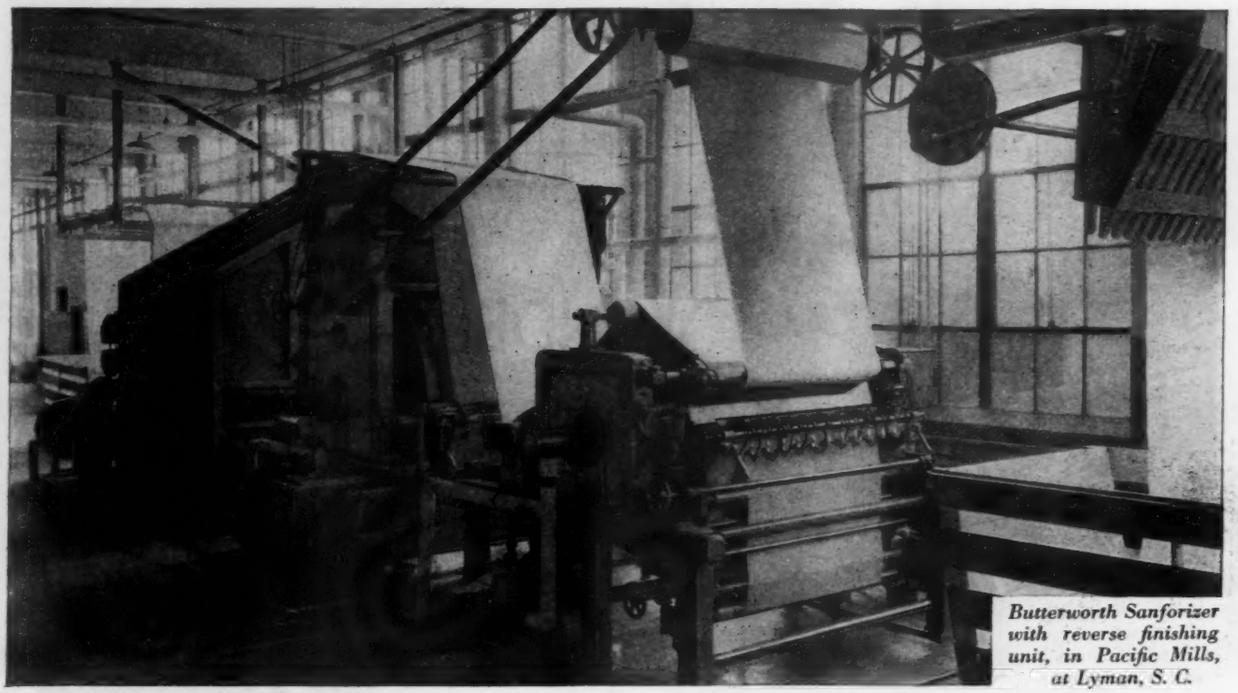
# TEXACO
## *tested* lubricants

**FREE**

A special "textile" issue full of valuable operating data. No cost or obligation. Just address The Texas Company, Dept. JJ 10, 135 East 42nd Street, N. Y. C.

The Texas Company, 135 E. 42d St., N.Y.C. ★ *There is a Texaco tested Lubricant for every purpose*

# *Butterworth Reverse Finishing Unit can be furnished for any Sanforizer . . .*



*Butterworth Sanforizer with reverse finishing unit, in Pacific Mills, at Lyman, S. C.*

## *. . . gives finish to back of fabric*

**EVERY . . .**

**Sanforizer should have a Butterworth Clip Expander.**

**It feeds fabric straight into the finishing machine and aids the cutter by assuring even selvedges.**

**Our engineering department is at your service to discuss any individual question relative to finishing your fabrics.**

**And speaking of Butterworth Sanforizers look at this list of concerns that has installed them.**

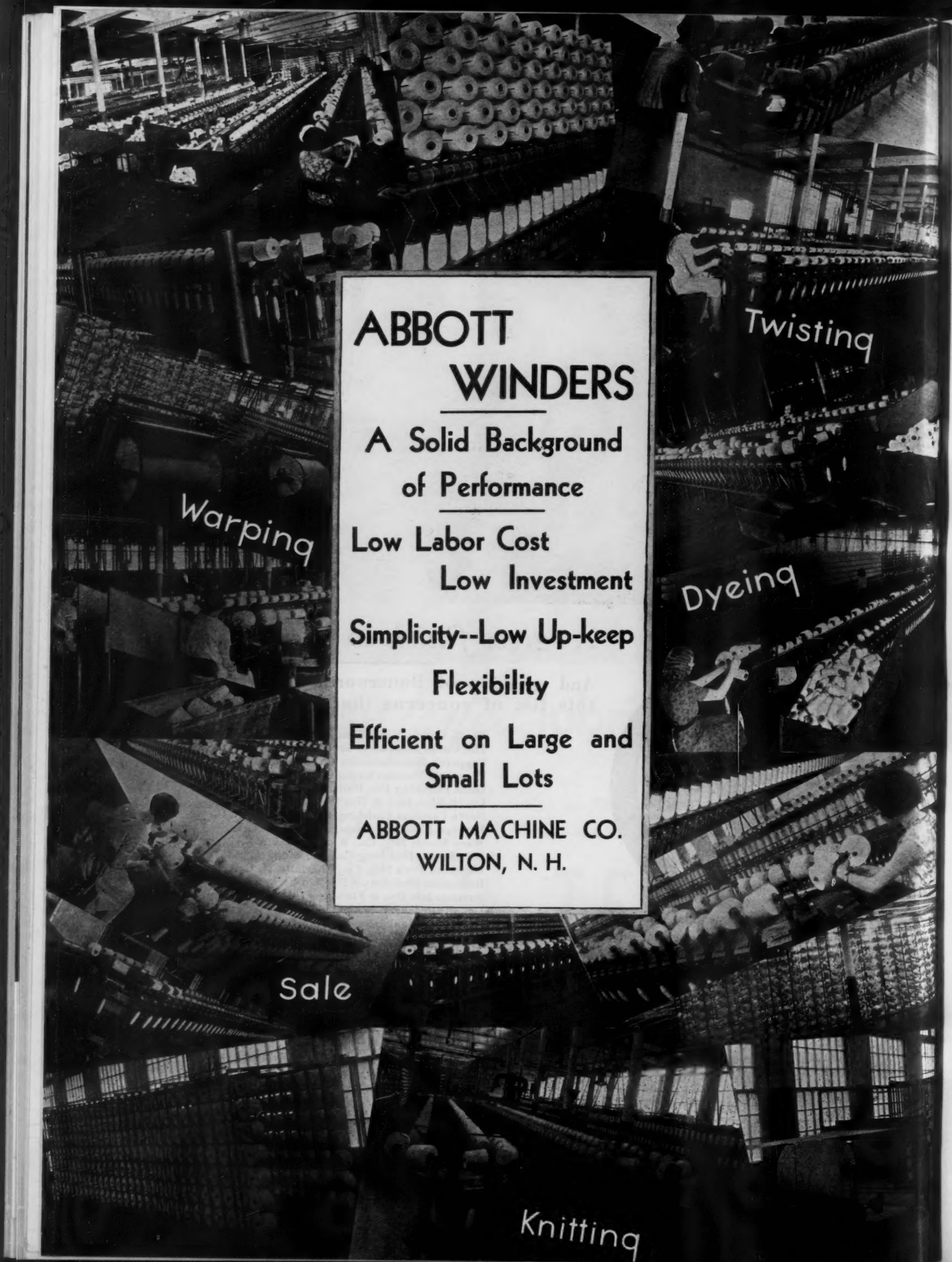
**Erwin Cotton Mills, West Durham, N. C.**
**The Union Bleachery, Greenville, S. C.**
**Pepperell Manufacturing Co., Lindale, Ga.**
**Pepperell Manufacturing Co., Lewiston, Maine**
**Delta Finishing Co., Philadelphia, Pa.**
**Lanett Bleachery & Dye Works, Lanett, Ala.**
**North Carolina Finishing Co., Salisbury, N. C.**
**Ramapo Finishing Corp., Sloatsburg, N. Y.**
**Ware Shoals Mfg. Co., Ware Shoals, S. C.**
**Fair Forest Finishing Co., Spartanburg, S. C.**
**Highland Park Mfg. Co., Charlotte, N. C.**
**Robertson Bleachery & Dye Works, New Milford, Conn.**
**Summerdale Dye & Finishing Co., Holmesburg, Pa.**
**Lowell Bleachery, St. Louis, Mo.**
**Amoskeag Manufacturing Co., Manchester, N. H.**
**Arnold Print Works, North Adams, Mass.**
**Martin Dyeing & Finishing Co., Bridgeton, N. J.**
**Pacific Mills, Lyman, S. C.**

**H. W. BUTTERWORTH & SONS CO.**
*Established 1820*
**PHILADELPHIA, PA.**
PLANTS *at* PHILADELPHIA *and* BETHAYRES, PA.

*New England Office:* TURKS HEAD BUILDING Providence, R. I.
*Southern Office:* JOHNSTON BUILDING Charlotte, N. C.
*In Canada:* W. J. WESTAWAY CO. Hamilton, Ontario

# BUTTERWORTH *Finishing* MACHINERY

A COMPLETE LINE OF FINISHING AND RAYON MACHINERY FOR THE TEXTILE INDUSTRY




# ABBOTT WINDERS

**A Solid Background of Performance**

**Low Labor Cost**
**Low Investment**

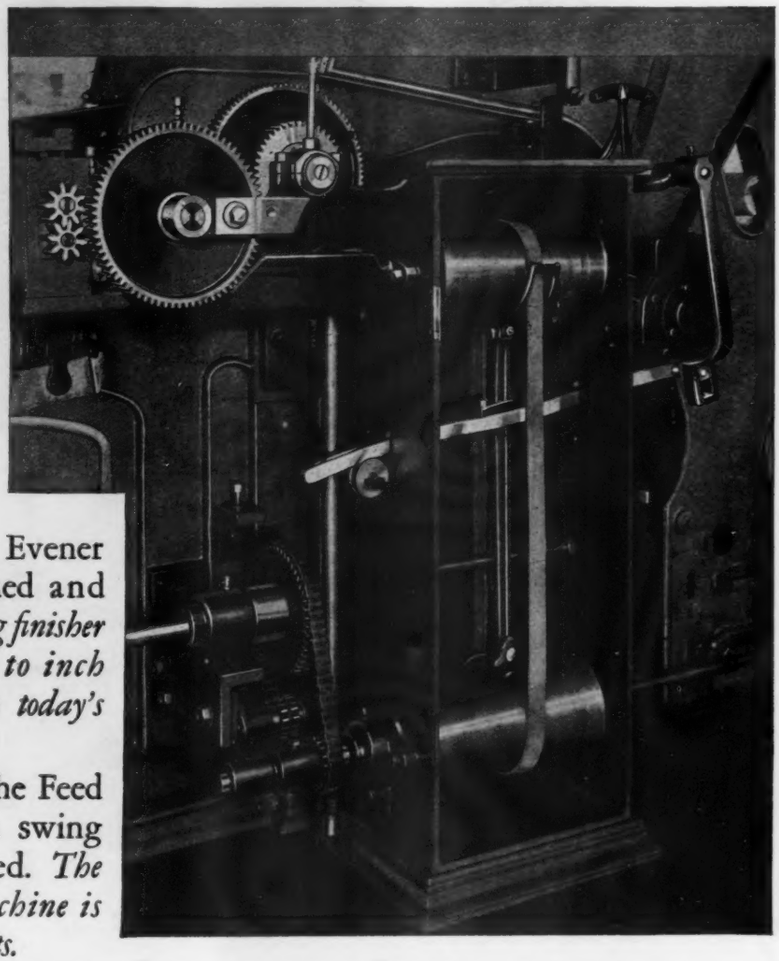
**Simplicity--Low Up-keep**

**Flexibility**

**Efficient on Large and Small Lots**

ABBOTT MACHINE CO.
WILTON, N. H.

# The WHITIN 1934 Picker Installation



the result of more than one hundred years of progress in building Preparatory Machinery

FEED Regulator and Evener Motions scientifically designed and accurately built *aid in producing finisher laps with very slight inch to inch weight variation, required in today's Picker Room.*

In the breaker section, the Feed Regulator is controlled by a swing rake in the Intermediate Feed. *The amount of stock fed to the machine is thus held within very close limits.*

The finisher section Evener Motion is controlled by sixteen pedals under pedal rolls, acting on evener belt guide through double links with straight lift. *A positive and easy drive,* with heavily constructed worms, worm wheels and spur gearing, readily interchangeable for adjustment.

Design of cone belt slide bar *compels belt eye to follow the contour of cones at all times,* insuring extreme sensitivity and efficiency in the Evener Motion.

## The stock is evened BEFORE it reaches the Feed Rollers

All parts readily accessible for rapid adjustment. Cleanout doors conveniently located, of ample size. Ball-bearings used generously throughout wherever practical and advantageous.

WHITIN MACHINE WORKS **WHITIN** WHITINSVILLE, MASS.

YEARS ago we chose the way of Research, Study and Creative Development, as our guiding policy. In so doing we have builded a heritage of service and a standard of quality in our products, recognized throughout the world. To our own Technical Service and Research Department can be attributed the exclusive origination and development of:

## Solving Textile Paper-carrier Problems

1. The Velvet Surface Cone.
2. The Velvet Surface Tube.
3. Reinforced Cork Cot.
4. Sonoco Underclearer Roll.
5. Dunlap Nose (for cones).
6. Single Head Thread Spool (all paper)
7. The Dytex Tube.
8. New Satin-Finish Cone.

Within convenient distance of 90% of the Textile Industry are four strategically located Sonoco plants—i.e., Hartsville, S. C., Rockingham, N. C., Garwood, N. J., and Brantford, Ontario — permitting unparalleled service in the prompt execution of orders and quick delivery. Thus, has Sonoco kept faith with all the requirements for Service to the Textile Industry.

# SONOCO PRODUCTS COMPANY

Main Plant and General OFFICES—Hartsville, S. C.

Branch Plants:
Rockingham, N. C.
Garwood, N. J.
Brantford, Ont.

Eastern Sales Office:
North Avenue,
Garwood, N. J.

*DUE TO THE POSTPONEMENT*
*OF THE GREENVILLE TEXTILE SHOW*

*THE FOLLOWING*

## *NEW HIGHER SPEED LOOMS*

*ARE ON SPECIAL EXHIBITION*
*AT WORCESTER, MASSACHUSETTS*

*COME—DURING OCTOBER OR NOVEMBER—WRITE FOR ILLUSTRATED BOOKLET*

**Type S3** Super Silk and Rayon Loom—Shuttle Changer 54" between swords, 20 harness dobby, 2 x 1 box, Weaving rayon crepe.

**Type W2** High Speed Worsted Loom—Bobbin Changer 82" between swords, 20 harness head, 4 x 1 box, Weaving men's suiting.

**Type W3** High Speed Woolen Loom—Bobbin Changer 92" between swords, 26 harness head, 4 x 1 box, Weaving men's overcoating.

**Type C3** Cotton King Cam Terry Towel Loom—Bobbin Changer 33" between swords, 4 harness, 2 x 1 box, 8¾" x 1⅝" bobbin, Weaving 3-pick toweling at 182 picks per minute.

**Type C3** Cotton King Knowles Head Motion Loom—Bobbin Changer 48" between swords, 16 harness, 2 x 1 box, 8¾" x 1⅝" bobbin, Weaving plaid cotton pant goods.

**Type C3** Cotton King Dobby Dress Goods Loom—Bobbin Changer 48" between swords, 20 harness, 4 x 1 box, 8¾" x 1⅝" bobbin, Weaving fancy cotton dress goods.

CROMPTON & KNOWLES LOOM WORKS

LOOMS FOR COTTONS, SILKS, RAYONS, WOOLENS, CARPETS AND RUGS, BLANKETS, JACQUARD FABRICS, ASBESTOS, LINENS

Allentown Paterson Philadelphia Pawtucket WORCESTER, MASS. S. B. Alexander, So. Mgr., Charlotte

# *There is no Substitute for Experience*

## "HIGH GRADE"

BOBBINS
SPOOLS · ROLLS
CONES · SKEWERS
AND SHUTTLES
OF EVERY DESCRIPTION

FIFTY-ONE years ago, the David Brown Company started to meet the requirements of the textile industry for better bobbins and shuttles. Today, we are serving many customers whose first orders were placed with us when our organization was founded.

For fifty-one years we have faithfully served these customers, and year-after-year since then new customers have gradually come to recognize "HIGH GRADE" as the highest standard of quality in bobbins, spools, skewers, rolls and shuttles.

There's a representative near you who can supply your requirements quickly and with perfect satisfaction. May we serve you, too?

# The DAVID BROWN Co.

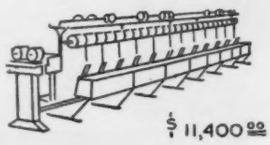
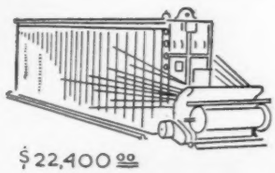
*MAIN OFFICE AND FACTORY*

LAWRENCE, MASS.

*SOUTHERN REPRESENTATIVES:*

*Ralph Gossett, Wm. J. Moore,* 904 Woodside Bldg., Greenville, S. C.
*Belton C. Plowden, Griffin, Ga.*
*Russell A. Singleton, Dallas, Tex.*
*Gastonia Mill Supply Co., Gastonia, N.C.*
*James Supply Co., Chattanooga, Tenn.*
*S. F. Jones, R. A. Brand,* 212 Johnson Bldg., Charlotte, N. C.
*J. R. Plowden, Birmingham, Ala.*

# Simple Arithmetic on High Speed Warping

| UNIVERSAL | *Average Cost* (based on 80-hr.-week) | COMPARABLE MACHINE |
|---|---|---|
|  $11,400.00 | *Investment* |  $22,400.00 |
| $57.00 | *Maintenance* | $896.00 |
| $9,900.00 A YEAR | *Labor* | $8,900.00 A YEAR – ONLY 10% LESS |
| *No* COST HANDLES ANY SPINNING BOBBIN | *Spinning Room Change-Over* | TOTAL COST OF CAMS AND NEW BOBBINS |
| 26½% | *Net Return on Investment* | 12% |

Above are certain figures pertaining to a mill whose costs we studied because we consider they cover the average case. May we go into them -- on the basis of your particular mill's conditions? There is no obligation. Write Dept. A., Boston.

## UNIVERSAL WINDING COMPANY
BOSTON

NEW YORK PHILADELPHIA PROVIDENCE SPRINGFIELD UTICA CHARLOTTE ATLANTA

UNIVERSAL LEESONA WINDERS

1705

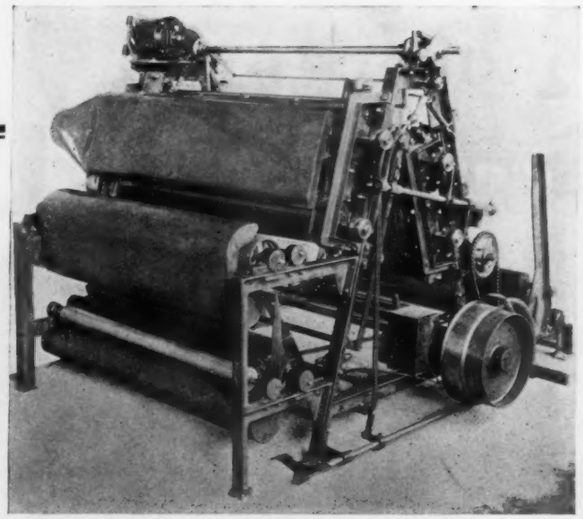
# REPAIR HENDERSON PARTS

*They Always Fit*

When you purchase a HENDERSON REPAIR PART for any textile machine you can be sure that it is perfectly accurate and always fits the machine for which it was intended. We have precision patterns for practically all makes of textile equipment. Eliminate "guess-work" when buying your repair replacements.

Anticipate breakdowns and eliminate time-loss by replenishing your stocks of repair parts NOW. Let us quote you on any textile part, large or small.

**HENDERSON FOUNDRY & MACHINE WORKS « « HAMPTON, GA.**



*Showing the new shear with a brush and rolling attachment.*

# Announcing the New Hermas Shear!

●

# —at unusual NEW LOW PRICE!

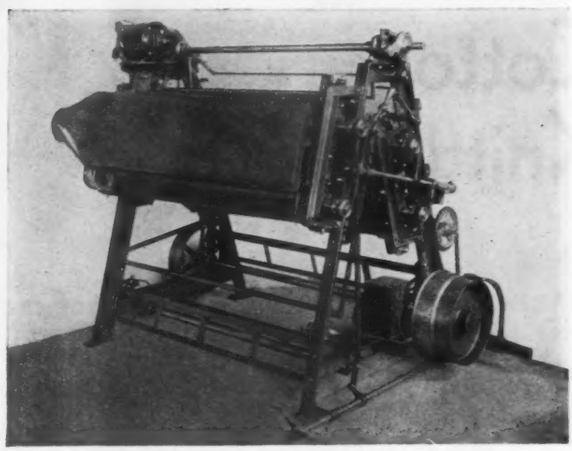
●

**—radical new design!**

**—greatly improved automatic!**

**—saves floor space!**

**—may be used with present brushing and rolling equipment!**



*Showing new shear.*

**This new Hermas Shear sells at the lowest price at which a 4-knife automatic shear was ever offered!**

**It has many new features. The vastly improved automatic never cuts a seam, no matter how close together seams may be. Each pair of knives is enclosed in a suction hood—which also acts as a perfect guard over them. After leaving first pair of knives the cloth is elevated for inspection.**

**Compare this new machine for price, production, and design with any other shear ever offered. Write for full details of this machine and unusual new low price.**

## HERMAS MACHINE CO.

HAWTHORNE, NEW JERSEY

Southern Representative—

CAROLINA SPECIALTY CO., CHARLOTTE, N. C.

HERMAS

# Cone Winding Cotton Knitting Yarn

CONE WINDING, the final process in yarn mills and mercerizing plants making yarn for Knitting is the mills' most important process and if scientifically done, will assure satisfied Knitting customers.

Model 102 winding adds this value to a mill's product.

Two of the qualities Foster Model 102 cones have that are appreciated by Knitters are **EVEN DENSITY** always and **SOFTNESS** when necessary especially on mercerized yarns. These qualities make for even tension and even give-off of the yarn from the cone on the Knitting Machine and are reflected in the resulting high grade appearance of the Knitted fabric.

## Foster Machine Company

**WESTFIELD, MASSACHUSETTS**

**FRED P. BROOKS, REPRESENTATIVE, BOX 941, ATLANTA, GA.**

# *Save Money With*

# U S BOBBINS

MADE from the very best materials, and carefully gauge-tested, these bobbins are produced in our three Southern plants, assuring you of quick deliveries and service at short notice.

**AUTOMATIC LOOM BOBBINS*** (Originated by U S) that will not split your filling—yarn will not stick to them. Rings used are fabricated from special tempered steel—they are guaranteed to be straight and evenly spaced insuring proper fit in the shuttle grip.

**WARP FILLING WIND BOBBINS*** that are true running at high speeds —finishes that will not sliver the yarn. We also make large package bobbins for long draft spinning.

*Finishes for all conditioning purposes.

**CARD ROOM BOBBINS** impregnated and finished perfectly smooth inside and out to prevent possibility of injury to yarn. Exact diameters prevent weak or uneven roving.

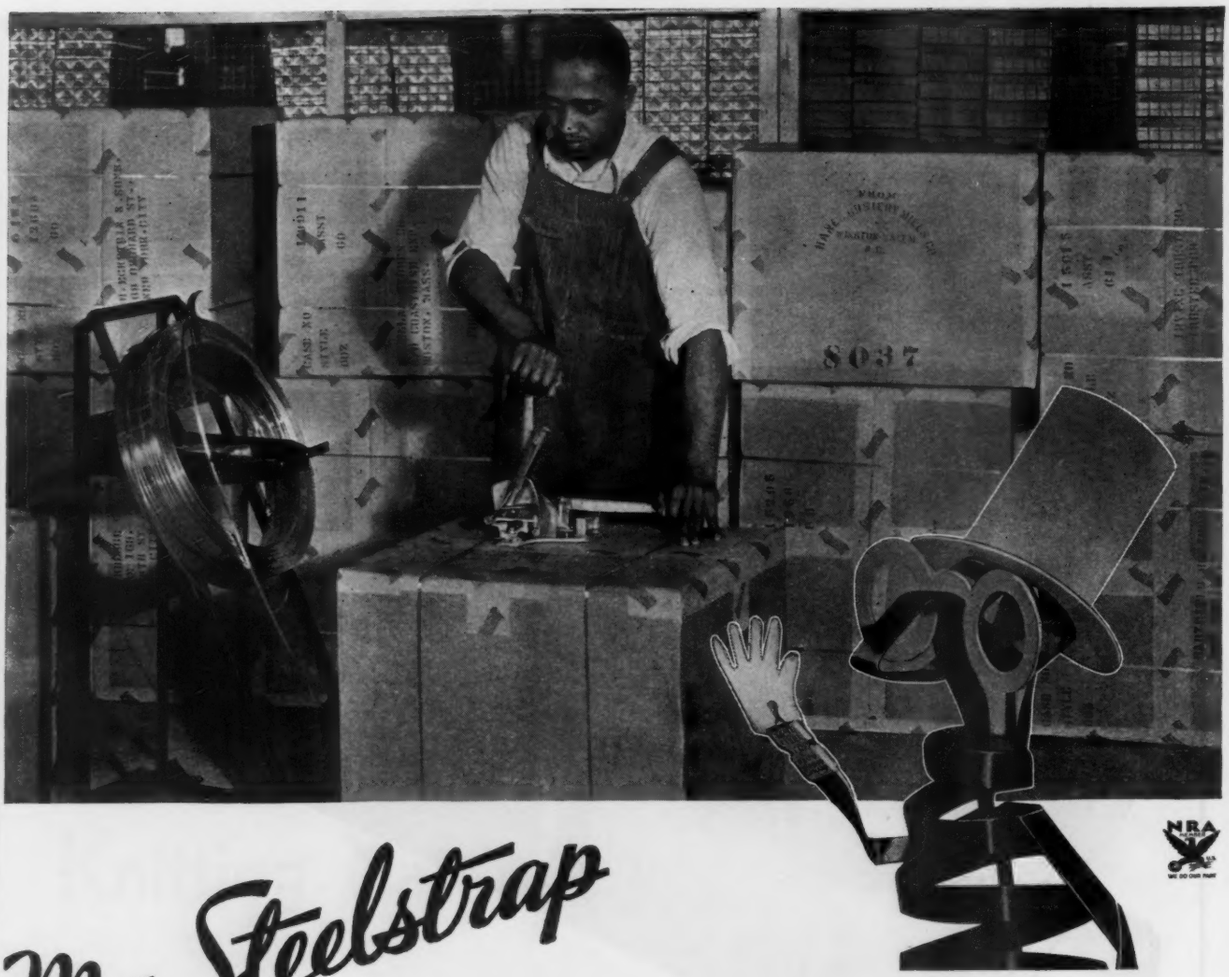
*Ask the nearest U S Sales Representative to demonstrate these products to you.*

## U S BOBBIN & SHUTTLE CO.

### Manchester, New Hampshire

Branches: Providence, R. I.; Lawrence, Mass.; Philadelphia, Pa.;
Monticello, Ga.; Greenville, S. C.; Johnson City, Tenn.

BETTER BOBBINS • SPOOLS • CONES • SHUTTLES




NRA

# My Steelstrap

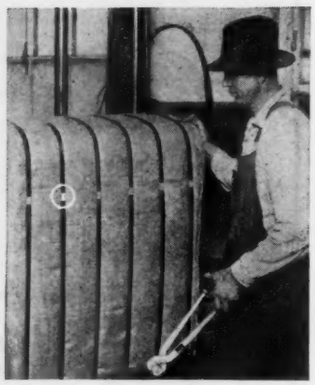
## TREATMENT MAKES THE MOST HEAVILY LOADED CASES "*Bound to Get There*"

Just two slender tempered steel straps, tightly tensioned and sealed around a 140 pound package like this, increase its carrying efficiency 100%. And in addition to adding strength, the Acme seal makes the package mighty hard to get into — preventing to a great degree the possibility of pilferage.

Scores of mills have adopted this safe, modern method of shipping — depending on the Acme Steelstrap system for quick economical reinforcement.

Send for a sealed sample of the special Steelstrap being used by most mills for this purpose — and full particulars. Of course there is no obligation.

Doc. *Steelstrap*



**BALE TIES**

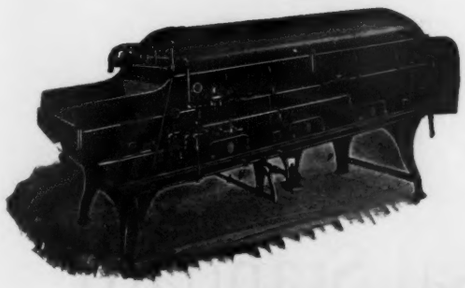
*For more than a quarter century, Acme Bale Ties have served the textile industry. Strong, clean, rust-resisting. Secured with Acme Bale Tie Seals, or Buckles.*

Acme Steelstraps

**ACME STEEL COMPANY · GENERAL OFFICES: 2847 ARCHER AVE., CHICAGO**

Atlanta • New Orleans • San Francisco • Boston • Brooklyn

# FLAWLESS DESIGN, CONSTRUCTION
## that shows up in operation



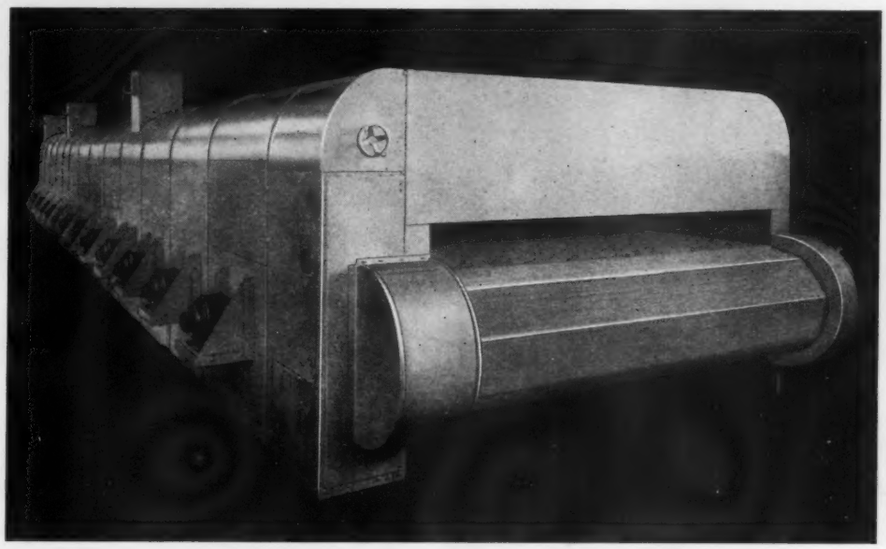
Manufactured to rigid quality and performance specifications—under constant test and supervision, each Sargent Textile Machine assures dependable and profitable results in operation.

*THE NEW SINGLE APRON DRYER*

*No belts or guards. No vibration. Individual motor driven fans and apron drive. Lower horsepower and steam consumption. New hinged type apron conveyor—and many other features.*

*YARN CONDITIONING MACHINE*

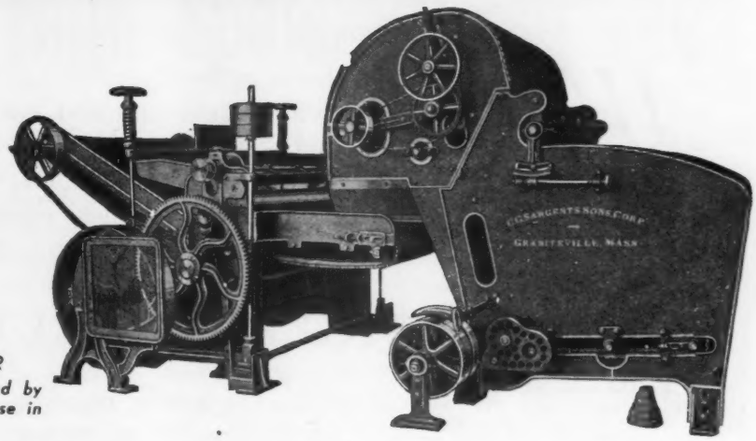
*From this machine the filling can go to the looms in one half hour. Automatic in operation this machine conditions every batch evenly and uniformly.*



SARGENT

SARGENT PRODUCTS

Acidifying Machines . . Automatic Extractor Machines . . Automatic Feeders . . Back Washers . . Back-Wash Dryers . . Bagging Machines . . Ball Winding Machines . . Carbonizing Dryers . . Cloth Dryers . . Carbonizing Dusters . . Cotton Stock Dryers . . Crush Roll Machines . . Press Roll Machines . . Single Apron Dryer . . Special Dryers . . Wool Drying Machines . . Wool Washing Machines . . Yarn Conditioning Machines . . Yarn Scouring Machines.



*CONTINUOUS AUTOMATIC EXTRACTOR*

*The efficiency of this machine is widely appreciated by the textile industry as seen in its extensive use in hundreds of the leading mills of the country.*

C. G. SARGENT'S SONS CORP.

*Founded 1852*

GRANITEVILLE, MASSACHUSETTS

*Southern Agent*
FRED H. WHITE, CHARLOTTE, N. C.
FRED P. BROOKS, ATLANTA, GA.

*Philadelphia Agent*
F. E. WASSON
930 DREXEL BLDG., PHILADELPHIA, PA.

# Most Satisfactory Results are Obtained in the Spinning and Twisting of all Fibres

*by using*

# Universal Standard Ring Travelers

MANY years of experience and experimental investigation by one of the largest and oldest ring traveler manufacturers have perfected ring travelers of highest quality and uniformity to ensure satisfaction for your particular requirements. If you are spinning or twisting high grade quality yarns, requiring ring travelers of quality and uniformity, we will welcome the opportunity of submitting samples for your approval.

WHEREVER millmen gather to exchange ideas and experience, there is a definitely expressed satisfaction and assurance covering the advantages and accomplishments advanced by the—BOWEN PATENTED BEVEL EDGE,—the BOWEN PATENTED VERTICAL OFFSET and the PATENTED NE-BOW VERTICAL TRAVELERS. These offer better spun and twisted yarns.

Manufactured exclusively by the—

## U. S. RING TRAVELER COMPANY

**PROVIDENCE, R. I.** **GREENVILLE, S. C.**

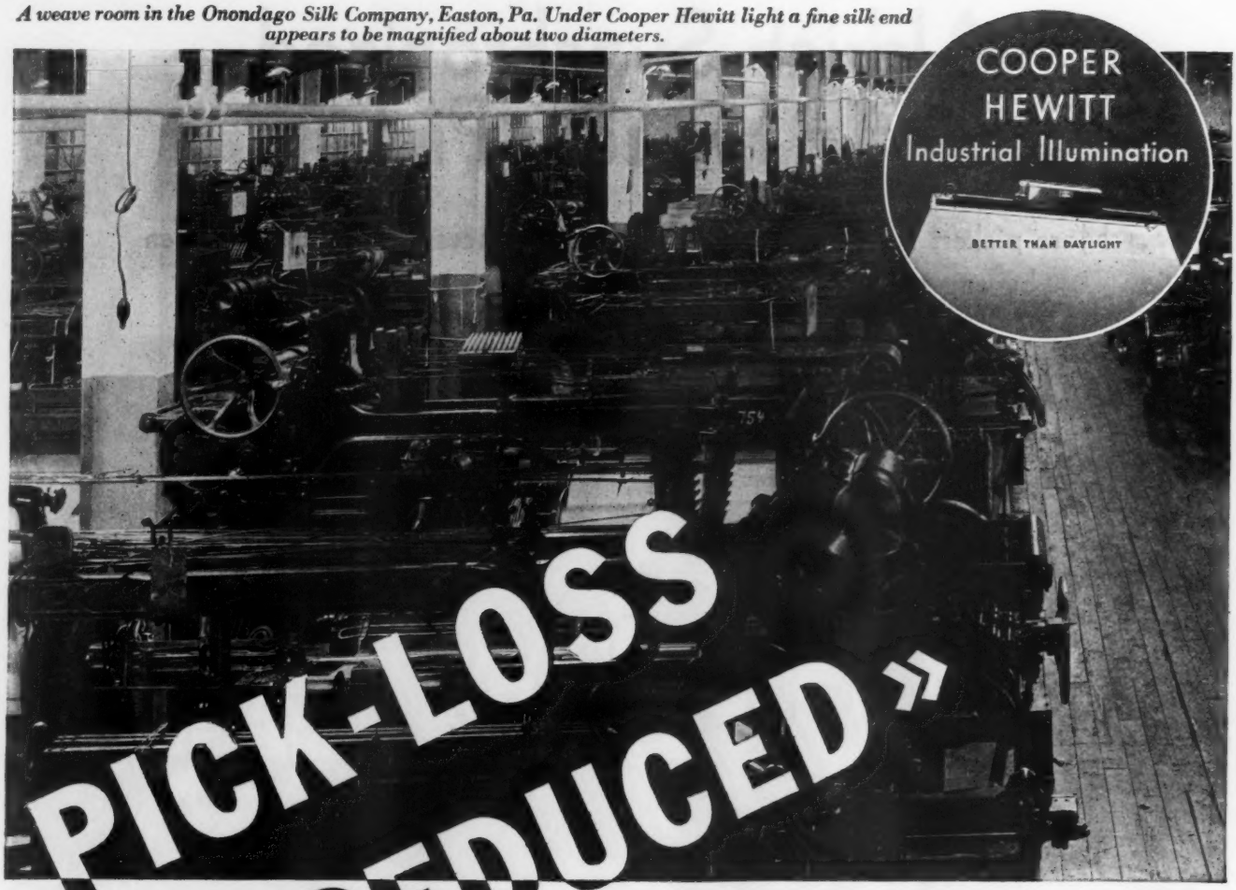
**AMOS M. BOWEN**
*President and Treasurer*

**SOUTHERN SALES REPRESENTATIVES**

Wm. P. Vaughan, P. O. Box 792, Greenville, S. C.
Oliver B. Land, P. O. Box 158, Athens, Georgia.
Torrence L. Maynard, P. O. Box 454, Belmont, N. C.

## "A TRAVELER FOR EVERY FIBRE"

*A weave room in the Onondago Silk Company, Easton, Pa. Under Cooper Hewitt light a fine silk end appears to be magnified about two diameters.*




# "PICK-LOSS IS REDUCED"

## by the Light that High-Spots Broken Ends

Thin places, mis-draws, over- and under-shot picks, shuttle marks and other defects in the cloth are unavoidable despite the ability of modern textile equipment to think for itself. Whether it is called pick-loss or by any other name, the time during which machinery is idle for repairs or adjustments is a costly item in the operation of any mill.

Because of its established ability to help workers save time at every step, Cooper Hewitt mercury-vapor lamps play a large part in lighting hundreds of textile mills throughout the country. Under this cool, glareless light, weavers can see down through the harness and reeds to locate defects with amazing speed and accuracy. They are aided in the inspection of the cloth itself by the way Cooper Hewitt light brings each end out in sharp relief. They can tie in ends from either side, and look up through the heddle right into the light source without the glare ordinarily encountered. Loom fixers can see to work more easily because of the absence of intense shadows under Cooper Hewitts. Even for such tasks as adjusting warp stop motion, changing harness cams and jack gears, fixers can dispense with hand lamps when Cooper Hewitts are on the job.

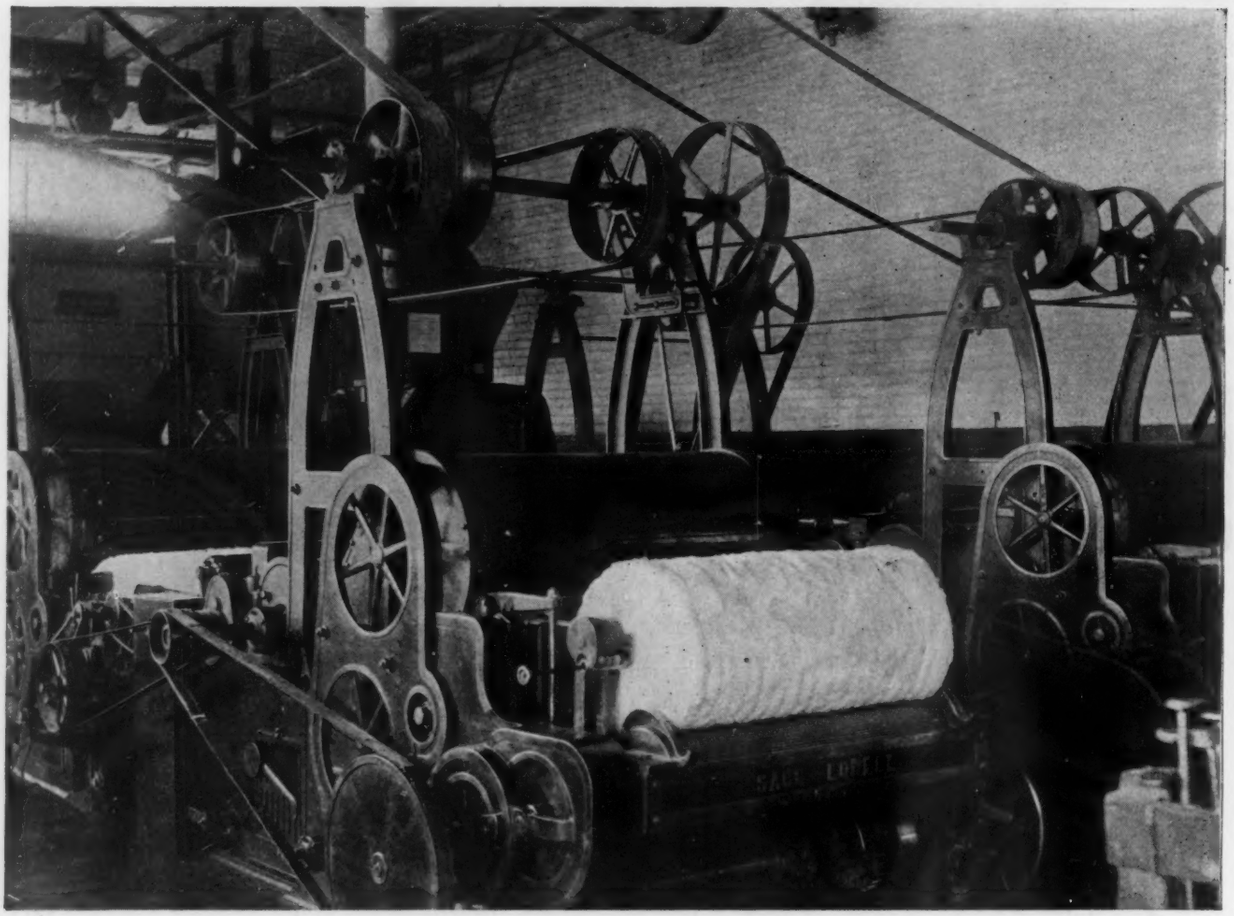
There need be no guesswork about what Cooper Hewitts can do toward cutting down your operating costs. A month's trial in any area you select will settle the matter to your entire satisfaction. Such a trial will cost very little, and will place you under no obligations. It will do more than anything else to reveal the hidden costs of inefficient lighting. For full details, write to: General Electric Vapor Lamp Company, 853 Adams St., Hoboken, New Jersey.

**GENERAL ELECTRIC VAPOR LAMP COMPANY**

607 Copr. 1934. General Electric Vapor Lamp Co.

# Aldrich Synchronized Single Process Picking

**More pickers have been changed to single process by this method than by any other system. This definitely indicates its superiority.**



**In hundreds of comparative tests against other single process systems, the Aldrich method has consistently made the evenest laps with fewest losses.**

**Its Simplicity makes it Very Inexpensive.**

**It can be applied to outmoded single process systems to bring them up-to-date.**

Made and Installed by

**AldricH MachinE WorkS**

Greenwood, South Carolina

# Announcing

## The New O-TYPE Knotter

For many years Boyce Weavers Knotters have been standard equipment in mills all over the world, tying rapidly the perfect knot that weaves right into the cloth and burying itself so that it is invisible. Many thousands of dollars have been saved by this little machine in the reduction of seconds and loom stoppages, and profits have been increased through greater production and higher quality fabrics.

Now, the NEW O-TYPE Boyce Weavers Knotter has been perfected—smaller in size and construction, more easily handled, and produces a knot the tails of which are HALF THE SIZE of those produced by previous knotters. This will prove extremely profitable to weave mills in their warping, slashing and weaving. Knitting yarns will knit smoother with less seconds, twist will not be disturbed and considerable will be saved on knitting needles.

Write today for prices and further data on this new O-Type Boyce Weavers Knotter.

**MILL DEVICES CO., GASTONIA, N. C.**

44 FRANKLIN ST., PROVIDENCE, R. I.

**BOYCE Weavers KNOTTER**

# WEST POINT TEXTILE GEARS

*made from*

**SPECIAL ALLOY CAST IRON, CARBON STEEL, BRASS, BRONZE**

*in any type*

**SPUR, BEVEL, SPIRAL, INTERNAL, WORM, RACK AND SPROCKET**

*with*

**CUT OR CAST TEETH**

●

Prompted by the desire to more completely and adequately serve textile mills, we have added considerably to our gear making equipment. These facilities enable us to economically produce all types of gears used in textile mills.

●

*Your Inquiries are Solicited.*

●

## WEST POINT FOUNDRY & MACHINE COMPANY

*(Batson-Cook Company, Owners)*

WEST POINT, GEORGIA

*Also manufacturers of loom beams, beam heads, beam barrels, cloth inspecting machines, card cylinder bearings, picker drives and loom parts.*

# *The "WHY" of Tuffer*

**Toughness. . . . . .**

**Uniformity in manufacture.**

**Foundation exclusively ours.**

**Fairness in all our dealings.**

**Exactness in every detail.**

**Reputation. . . . . .**

PUT THEM ALL TOGETHER, THEY SPELL

## "TUFFER"

*The Card Clothing that is economical*

**Tuffer Products**
Lickerin Fillets
Feed Roll Fillets
Tumbler Fillets
Stripper Fillets
Worker Fillets
Doffer Fillets
Fancy Fillets
Cylinder Fillets

TRADE MARK
TUFFER
REG. U.S. PAT. OFF.

**Tuffer Products**
Doffer Rings
Strickles
Emery Fillets
Burnisher Fillets
Top Flats Recovered and extra sets loaned.
Lickerins rewired at Southern Plant.

**Midgley Patented Hand Stripping Cards and Inserted Eye and Regular Wire Heddles**

## HOWARD BROS. MANUFACTURING CO.

HOME OFFICE AND FACTORY: WORCESTER, MASS.

Southern Plant
244 Forsyth Street,
Atlanta, Ga.

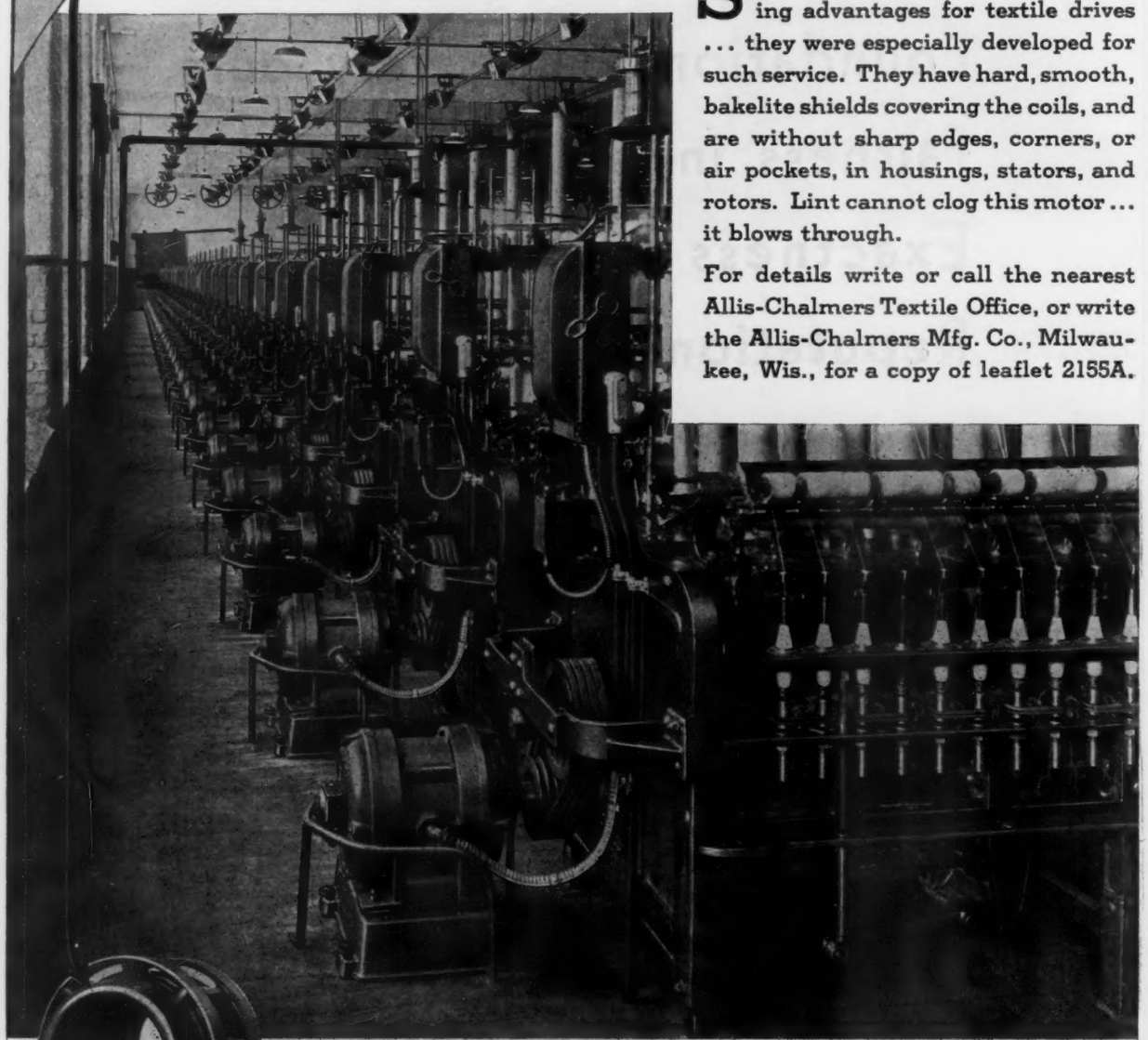
Branch Offices
Philadelphia, Pa., Dallas,
Texas, and Washington, D. C.

# Seal-clad Motors

## offer PERMANENT PROTECTION

SEAL-CLAD Motors have outstanding advantages for textile drives ... they were especially developed for such service. They have hard, smooth, bakelite shields covering the coils, and are without sharp edges, corners, or air pockets, in housings, stators, and rotors. Lint cannot clog this motor ... it blows through.

For details write or call the nearest Allis-Chalmers Textile Office, or write the Allis-Chalmers Mfg. Co., Milwaukee, Wis., for a copy of leaflet 2155A.



ALLIS-CHALMERS

TEXTILE MOTORS

# ...came the Revolution!

THE oldest is not necessarily the best. The fact that a company pioneered two generations ago in lubrication development does not, of itself, prove leadership today.

*But* when that company begins the study of industrial lubrication in 1865, and keeps at it through booms and depressions, from the days of slow-moving machines to the speed of modern production—meeting and beating other oils—

Then what it has to say about a new and different lubricant merits attention. E. F. Houghton and Company was the first to commercially adapt petroleum oils for use in lubricating machinery. Since the Civil War it has been at the head of its class in quality.

Few engineers will dispute that, and only a biased few will deny that this background entitles Houghton to a hearing when it announces—

*A new development in lubrication so startling that we believe it may, indeed, revolutionize the science of lubrication.*

There are three main properties any lubricant must possess to do its job most effectively:

*High film strength*
*Ability to stay "where put"*
*Lubricity, or "oiliness"*

Some oils possess only one of these properties, —others perhaps two of the three, but none has successfully combined all three. One property had a tendency to decrease as another increased. Chemists and engineers sought in vain to combine full load-carrying capacity with the ability to stay-in-place.

Then came Houghton's STA-PUT Lubricants, first introduced to industry by the Houghton Research Staff two years ago, and now further heightened in its film strength by means of the chemical introduction of mineral hydrocarbons possessing the highest load-carrying capacity and "stay-put" properties.

These lubricants meet all three qualifications previously mentioned. They maintain an unbroken film between bearing surfaces, preventing metal-to-metal contact, and are so "polymerized," or changed in molecular structure as to provide great cohesion and prevent creeping or dripping from the bearing.

We hear of marvelous results from the field on Sta-Put's performance. Here are a few extracts from recent reports:

*Paper Bag Manufacturer*—Formerly oiled presses and machines twice a day—frequent bearing failures. Now use Sta-Put: oil once a day—no bearing troubles—oil consumption and oiling labor cost reduced 50%—no production interruptions.

*Lock Manufacturer*—Bearings on line and countershafting formerly oiled once a week, ran seven hot bearings which were oiled daily. Now use Sta-Put—lubricate *all* bearings every three weeks— no hot bearings. Oil cost cut 80%, oiling labor cost cut 66%.

*Loom Manufacturer*—"We now oil *once* where we formerly oiled *twice*, and each time we only use half as much oil as formerly. Oil drip has been eliminated."

*Ink Manufacturer*—Formerly drained step-up gear sets every two weeks. Sta-Put was installed in May, 1933, and to date no oil has been added and no oil change made. Consumption reduced from 180 gallons to 5 gallons of Sta-Put in one year. Oiling labor cost cut 96%.

And so it goes throughout industry. That's why we say, "With Sta-Put came the revolution." Houghton's Sta-Put *can* be the answer to *your* lubrication problems. Will you try it?

**STA-PUT**
**LUBRICANTS**

**Are Products of**

**E. F. HOUGHTON & CO.**
**Chicago PHILADELPHIA Detroit**
*And All Over the World*

*In the Weave-Room of the Dixie Cotton Mills . . .*

# NEWLY INSTALLED LIGHTING IMPROVES WORKING CONDITIONS

*The new lighting installation in the weave-room of the Dixie Cotton Mills consists of 200-watt MAZDA lamps in standard R. L. M. dome reflectors, spaced on approximately 10'x11' centers and providing an average lighting intensity of 12 to 13 foot-candles on the working surface of the looms.*

THE Dixie Cotton Mills of LaGrange, Georgia, manufacturers of nationally distributed cotton goods and one of a group of the largest textile mills in Georgia, recently improved general working conditions in their weave-room by increasing lighting intensities and improving the distribution of light in line with recommendations of General Electric engineers.

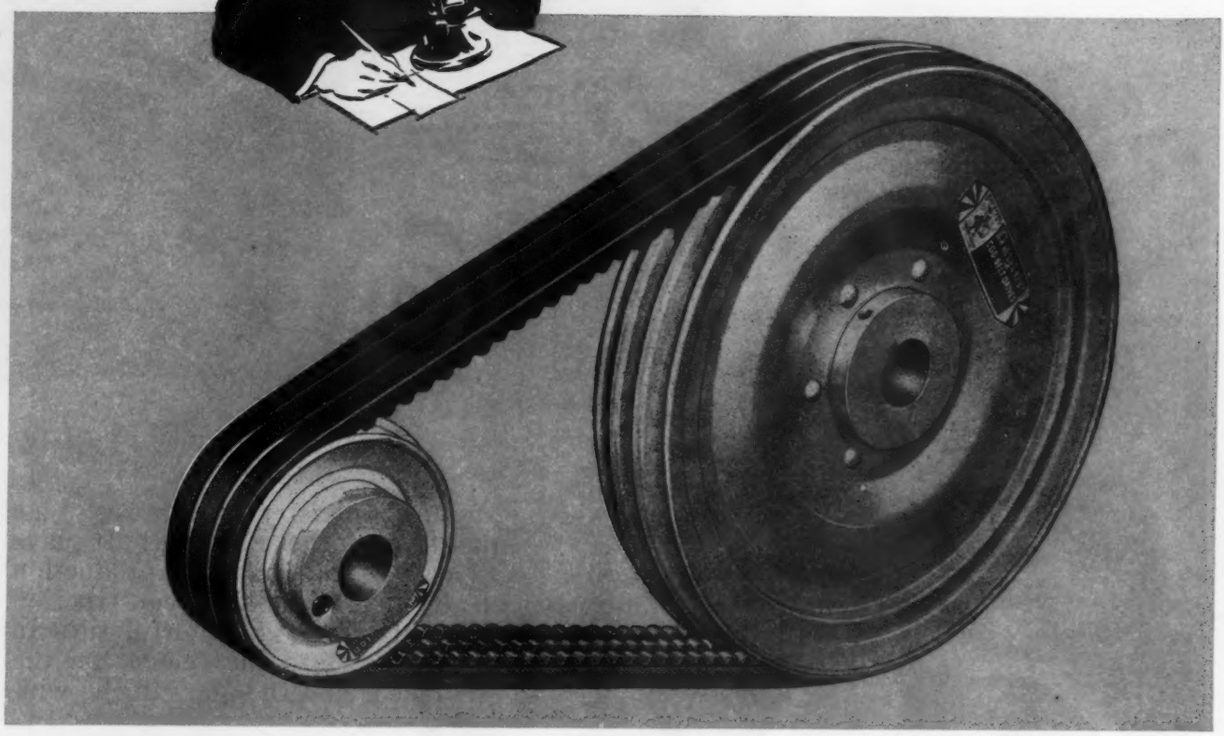
The lighting of the weave-room as shown in the photograph is a vast improvement over the old system where the units were spaced at irregular intervals and at varying heights . . . causing poor distribution of light intensities and considerable glare.

As the makers of lamps for every purpose, General Electric offers you the services of lighting experts, free of charge, to help you get the most out of your lighting equipment. Write to the Incandescent Lamp Sales Division of General Electric in your territory for further information. General Electric Company, Nela Park, Cleveland, Ohio.

**GENERAL ELECTRIC**

**MAZDA LAMPS**

# PHONE YOUR JOBBER FOR THE SIZE YOU NEED



## NOW Day-Steel Pulleys and Dayton Cog-Belts in all sizes, available everywhere

Today, in every leading industrial center Day-Steel Pulleys and Dayton Cog-Belts in a complete range of sizes are carried in stock. Thus, you can phone your local jobber at any time and he'll be in position to give you immediate service.

And along with this prompt and complete service now available everywhere, Day-Steel Pulleys used with the famous Dayton Cog-Belt assure new economy, new efficiency, new standards of performance. Here are some of their outstanding advantages:

1. Their initial cost and maintenance expense are from 30% to 50% lower.
2. They are *stronger* and *more rigid*, yet *lighter in weight*. That's because they are accurately formed from heavy-gauge pressed-steel, strongly welded both at the rim and at the web.
3. They are *accurately balanced* and run "true," because they are rigidly assembled with a hub of unique design.
4. Their high quality aluminum finish gives complete protection and a more attractive appearance.
5. They are now available in from *one to six grooves*—in all speed ratios; all center distances; all ratings up to 7½ h.p.
6. They are individually packaged for easy handling and include inter-changeable bushings for any sized bore.

Whether for use in your own plant or on machinery for resale, it will pay you to find out more about the increased efficiency and the increased economy that Day-Steel Pulleys and Dayton Cog-Belts will give you. Phone your Jobber. Or write us for Bulletin No. 110-A.

THE DAYTON RUBBER MANUFACTURING CO.
DAYTON, OHIO

*Factory Distributors in Principal Cities and All Westinghouse Electric and Manufacturing Co. Sales Offices*

# Dayton
## COG-BELT DRIVES

*Also manufacturers of Dayton Fan Belts . . . Dayton Red Tube Radiator Hose . . . and the famous Dayton Thorobred Tires and Tubes*

Another industry recognizes the quality of **Cocheco** Belting! It plays a part in the economical production of all kinds of building construction materials from the colorful tiles in the new roof to the cement on the cellar floor and the glass in the window-panes.

Leading manufacturers in this as in other important fields of industry choose **Cocheco** for the simple and always sufficient reason that operating efficiency, durability and economy in power transmission are *guaranteed* by **Cocheco** quality.

Used wherever leather belting can be used, ready to deliver the goods under the worst as well as the best working conditions. The detailed story of **Cocheco** Belting is told in the Williams "Book on Belts"—may we send you a copy?

**I. B. Williams & Sons**

**Dover, New Hampshire, U. S. A.**

DETROIT NEW YORK
CHICAGO PHILADELPHIA
GREENVILLE, S. C.

# COTTON

## and CHAMPION COTTON CONTENT PAPER

## Are The Products of the South

* * * *

Champion "Cotton Content" is a high class white paper for all business purposes—printing and writing—produced by a blend of selected fibres—cotton and wood—and made available for the growing needs of the South.

The Champion Fibre Company make a variety of high grade papers, including **Book Paper, Sulphite Bond, Envelope Paper,** and **Writing Paper**—all made from selected fibres and are Champion Fibres in the true sense.

The Champion Fibre Company make a complete line of Board Specialties.

The Champion Fibre Company make a high grade **Sulphite Textile Wrapper.**

* * * *

The Champion Fibre Company also manufacture Caustic Soda in Solid, Flake and Liquid forms, Sodium Hypochlorite, Sodium Resinate, Tanning Extract and Turpentine.

*The*
**CHAMPION FIBRE COMPANY**
CANTON, N.C.

**The W. R. C. Smith Publishing Company, Publishers of "COTTON," are users of Champion "Cotton Content" paper.**

# *YOUR* control problem *IS* different

JUST as one size and style of hat will not suit all men, so a single system of automatic control cannot be expected to meet the needs of all plants, even for the same process. Every control problem, including your own, is different.

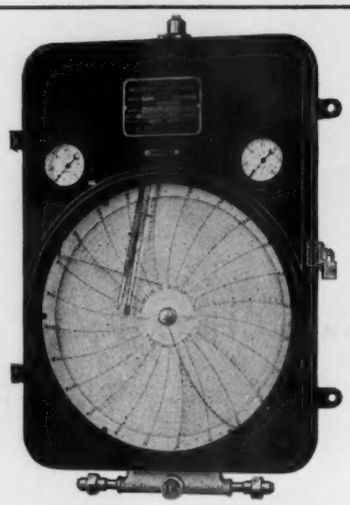
For example, the precise instrumentation to control temperatures and levels in cookers, size boxes and slasher cylinders depends primarily upon the working conditions, mill equipment and the object to be achieved. The same is true for automatically systematizing temperature in drying or other operation.

It is for this reason that Bristol's Research Engineers insist first on making a thorough study of *your* conditions and *your* needs. When this has been completed and analyzed, a properly planned control is designed that is correctly coordinated with *your* facilities and economic requirements.

The purpose of Bristol's Control is to produce the maximum profit under *your* conditions. For this Bristol's assumes undivided responsibility.

THE BRISTOL COMPANY, WATERBURY, CONN.

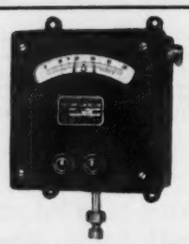
*Branch Offices: Akron, Birmingham, Boston, Chicago, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, St. Louis, San Francisco.*
*Canada: The Bristol Company of Canada, Ltd., Toronto, Ontario.*
*England: Bristol's Instrument Co., Limited, London S. E. 14.*



Full Floating Free Vane Air Operated Temperature Controller Model 5340M

Full Floating Free Vane Operated Pressure Indicating Non - Recording Controller Model 7040M

Process Cycle Controller, Model 6035



Electric Pressure Indicating Controller, Model 87

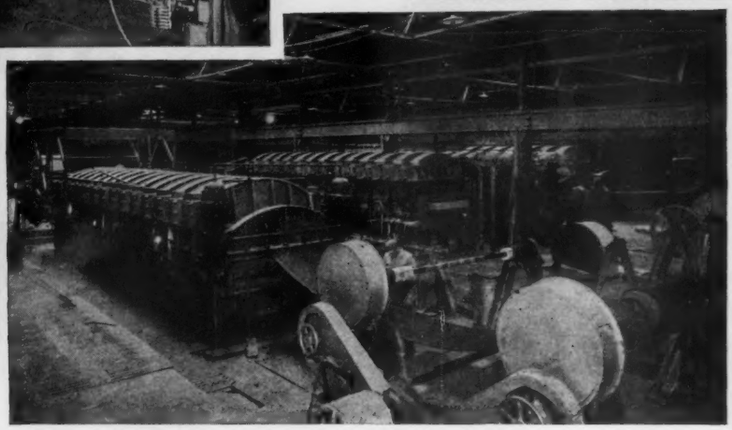
Direct Reading Electrically Operated Humidity Controller, Model 4077B

TRADE MARK

**BRISTOL'S**

REG. U. S. PAT. OFF.

PIONEERS IN PROCESS CONTROL SINCE 1889



# LARGE PRODUCTION
## UNDER SCIENTIFIC CONTROL

THE ENORMOUS FACILITIES of this company are aided by the most modern processes and laboratory equipment for the maintenance of our higher established standards in the manufacture of mechanical rubber products. Republic ranks among the world's foremost producers of mechanical belting, hose, packing, molded goods, extruded products and hand built items of practically every description.

Republic's exceptional quality is made possible by our rigid system of scientific control which governs every manufacturing stage from the raw rubber to the finished product. Such accurate control is a distinct achievement that has brought recognition to the Republic Quality Standard as a higher measure of ultimate worth, involving all factors of merit and adaptability in service. Particularly does it include those intangible elements which only long experience can embody in technical production and which distinguish the product that is scientifically made to suit the application.

Ask for complete information concerning any of Republic's Mechanical Rubber Products and the name of our nearest distributor.

## THE REPUBLIC RUBBER CO. YOUNGSTOWN, OHIO

MECHANICAL RUBBER PRODUCTS FOR EVERY INDUSTRIAL REQUIREMENT

• ORDER REPUBLIC RUBBER PRODUCTS •
FROM YOUR DISTRIBUTOR

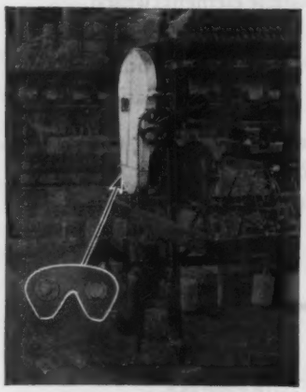
# Quaker Lace Co. Installs *Positive* LINK-BELT SILENT CHAIN DRIVES

Two encased Link-Belt Silent Chain Drives, connecting 1-150 KVA generator and 1-125 KW generator with steam engine.

A BETTER product, maximum production per machine and reduced costs, result from the smooth, even, accurate turning of rotating parts. Such are the results gained by Quaker Lace Co., Philadelphia, through their decision to drive all lace looms and spool and skein winders with Link-Belt Silent Chain Drives, which give this smoothness of power transmission, day in and day out. Silent Chain transmits the full R.P.M. of the motor.

Two Link-Belt Silent Chain Drives have also been installed (within rim of fly wheel) for driving 2 generators from steam engine. All drives operate in oil-leak-proof casings, the loom and winder drive casings being of the new TEX-TIL type, assuring cool drop-by-drop lubrication. Stewart A. Jellett Company were the Engineers.

Link-Belt Silent Chain Drives are made for any horsepower, and carried in stock by distributors, in sizes up to 60 H.P. Send for Data Book 125 and Stock List 725.



One of a number of Encased Link-Belt Silent Chain Drives operating winders.

One of many Encased Link-Belt Silent Chain Drives operating lace looms.

5105

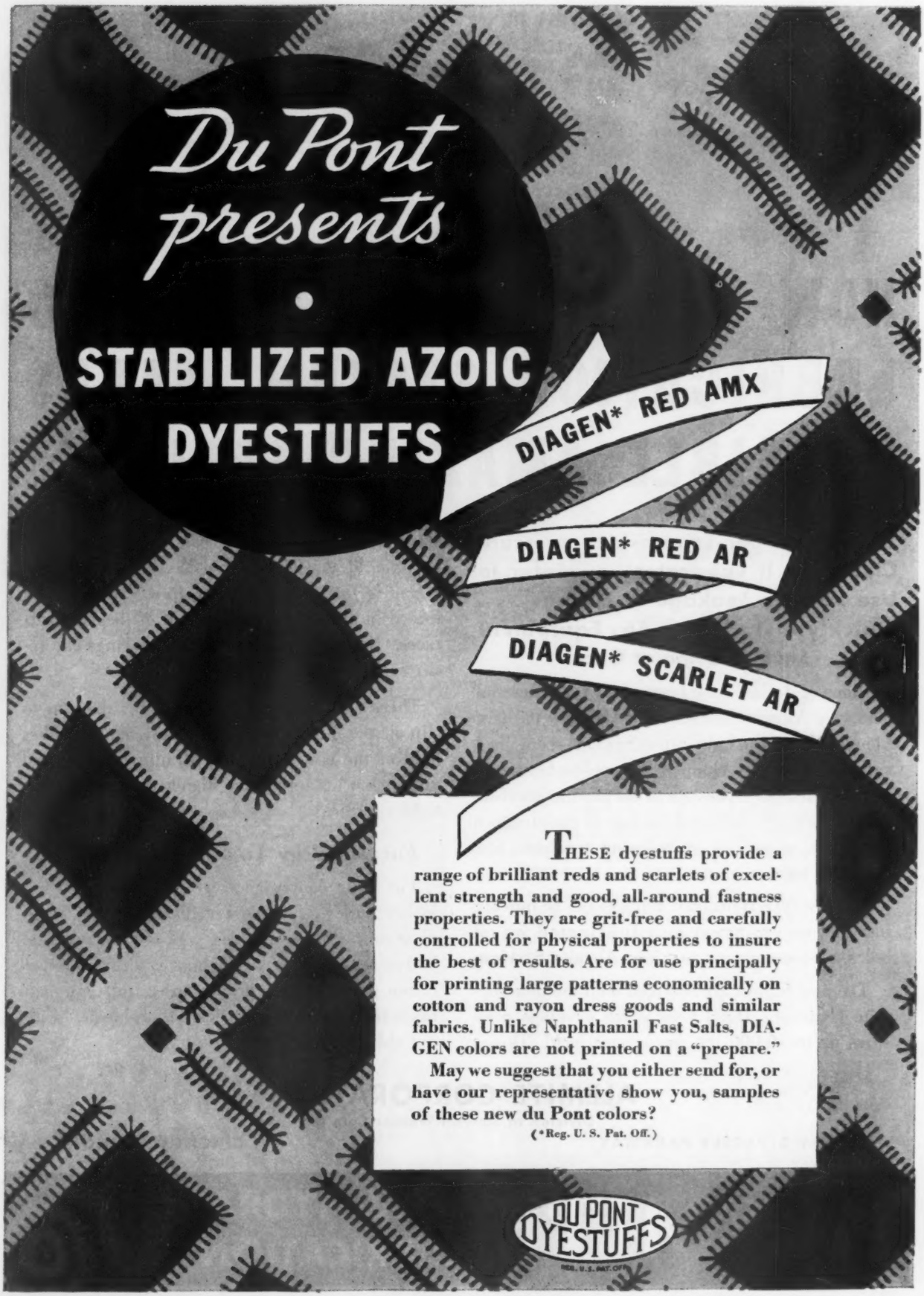
LINK-BELT COMPANY

PHILADELPHIA
BALTIMORE
BOSTON

Offices in Principal Cities

CHICAGO
DALLAS

ATLANTA
INDIANAPOLIS
NEW ORLEANS


Du Pont presents
STABILIZED AZOIC DYESTUFFS
DIAGEN* RED AMX
DIAGEN* RED AR
DIAGEN* SCARLET AR
THESE dyestuffs provide a range of brilliant reds and scarlets of excellent strength and good, all-around fastness properties. They are grit-free and carefully controlled for physical properties to insure the best of results. Are for use principally for printing large patterns economically on cotton and rayon dress goods and similar fabrics. Unlike Naphthanil Fast Salts, DIAGEN colors are not printed on a "prepare."
May we suggest that you either send for, or have our representative show you, samples of these new du Pont colors?
(*Reg. U. S. Pat. Off.)
DU PONT DYESTUFFS
REG. U.S. PAT. OFF.

E. I. DU PONT DE NEMOURS & CO., INC., ORGANIC CHEMICALS DEPT., DYESTUFFS DIVISION, WILMINGTON, DEL.

"YES - WE'VE EVEN MADE ADDITIONAL SAVINGS IN MAINTENANCE AND LABOR SINCE WE CHANGED OVER TO THE NEW ALEMITE HYDRAULIC LUBRICATION SYSTEM"

# HOW NEW ALEMITE HYDRAULIC LUBRICATION SYSTEM MAKES POSSIBLE AMAZING SAVINGS!

**10,000 lbs.-per-square-inch pressure Cleans as it Lubricates . . . Safer to Use . . . No Leakage at Fittings . . . Quickly Installed on Any Equipment Savings Begin at Once!**

Millions of dollars have been saved for industrial plants by Alemite lubrication. And now the new Alemite Hydraulic Lubrication System—combined with the famous Alemite "barrel-to-bearing" method—makes it possible to cut production costs still further, by additional savings in maintenance and labor, as well as by reducing accidents, lost time and repairs.

The new-type Hydraulic Fittings can be quickly installed on equipment now lubricated by oil holes, grease cups, or previous Alemite Systems.

The new fittings are serviced with the new Alemite Hydraulic Hand Gun which develops pressures up to 10,000 lbs. per square inch! This is far more pressure than it has ever before been possible to develop by hand. All worn, dirty grease is *forced out.* Fresh, new lubricant is forced in and completely around *all* bearing surfaces. No "dry spots" or frozen bearings can resist such pressure.

There's no leakage; no chance for the gun to slip off the fitting, because the gun actually takes hold of the new Alemite Hydraulic Fittings and grips them instantly—the higher the pressure the tighter the seal.

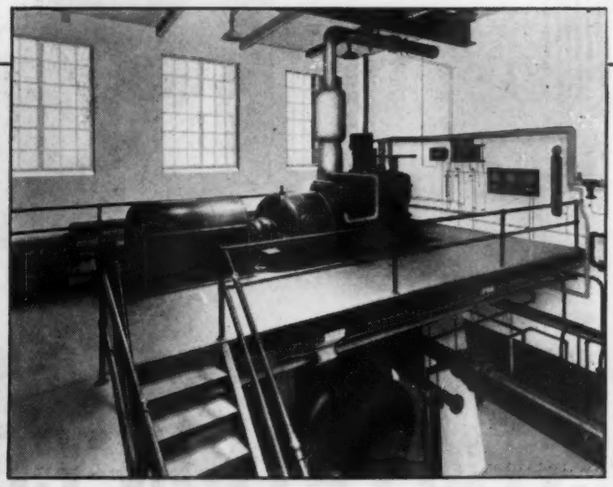
***Furnished by Your Regular Jobber***

For your convenience we have extended our jobber policy. For close contact with an immediate source of supply, you may call your regular jobber for purchase of Alemite Hydraulic Lubrication parts. We invite you to consult our engineers regarding your lubrication problems—without obligation.

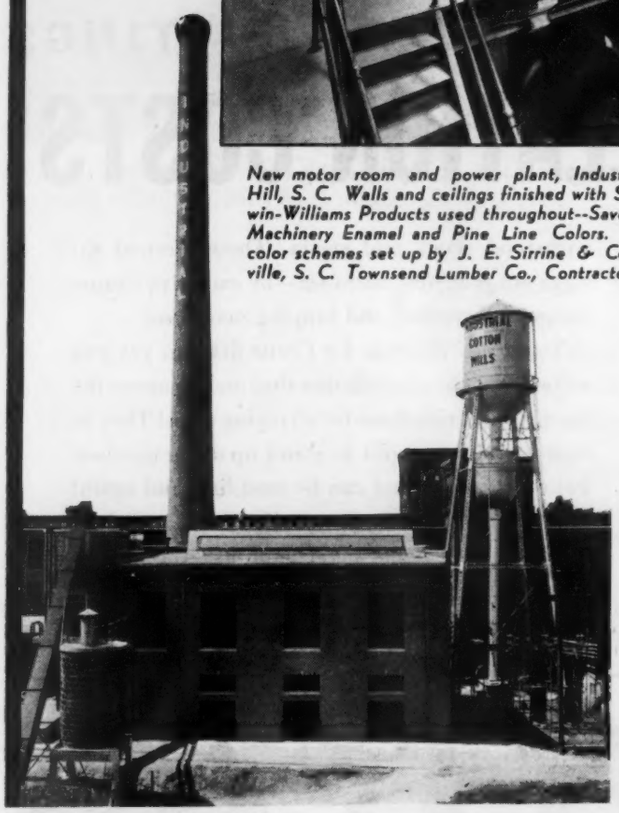
**ALEMITE CORPORATION**
Division of Stewart-Warner Corp'n.
1884 DIVERSEY PARKWAY CHICAGO, ILLINOIS

ALEMITE NEW HYDRAULIC LUBRICATION SYSTEM

# INDUSTRIAL COTTON MILLS CO. New Power and Filter Plants Finished with S-W Save-Lite



*New motor room and power plant, Industrial Mills Co., Rock Hill, S. C. Walls and ceilings finished with S-W Save-Lite. Sherwin-Williams Products used throughout--Save-Lite, Dado Enamel, Machinery Enamel and Pine Line Colors. Pipe Line standard color schemes set up by J. E. Sirrine & Co., Engineers, Greenville, S. C. Townsend Lumber Co., Contractors, Anderson, S. C.*




● **Textile mill operators who have tried Sherwin-Williams Save-Lite regard the painting of interior walls and ceilings as a *profit-paying investment.***

**Save-Lite *saves* and *earns* money at one and the same time. The superb whiteness of its film *softly diffuses* rays of light, natural or artificial, to all portions of rooms. This provides *better* working light, which means reduced spoilage, fewer accidents and better workmanship. Finer grinding and balanced formula give Save-Lite greater hiding and covering power. This cuts the *material* cost of painting. Sherwin-Williams *control* of the *quality* of all materials used in the balanced formula of Save-Lite insures longer life. Save-Lite stays white longer. This *reduces the frequency* of painting—cuts *both* material and labor cost.**

**Paint an even section of a wall in your plant with S-W Save-Lite. Paint another section alongside with any other mill white. Note the difference in hiding and covering power. Let them stand for six months. Then see the difference in film tightness and whiteness. The Sherwin-Williams Co., Dept. 627, Cleveland, Ohio.**

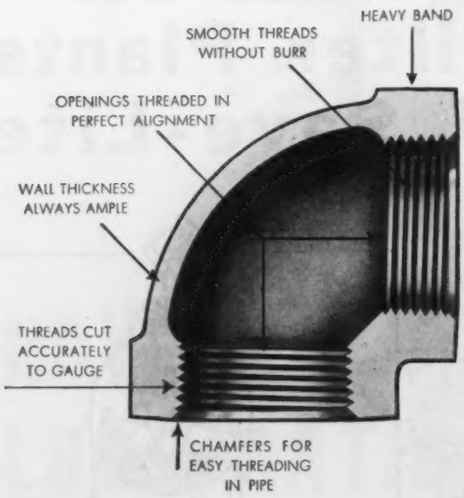
# SHERWIN-WILLIAMS PAINTS

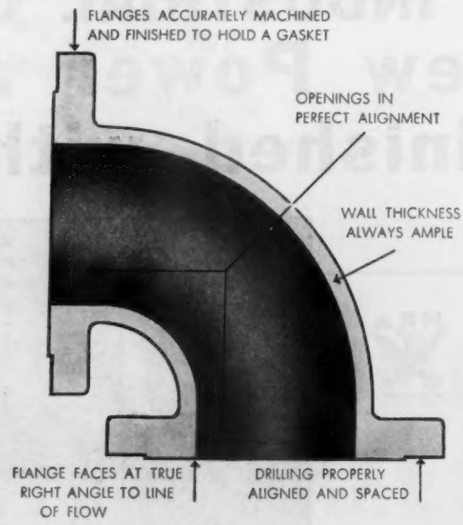
**STANDARD PRODUCTS FOR TEXTILE MILLS AND VILLAGES**

**Textile offices: Philadelphia, Charlotte, Spartanburg, Atlanta, Nashville, Newark, Boston.**

THE RIGHT MILL WHITE *Save Lite* FOR BETTER LIGHT—BETTER SIGHT

**EGG-SHEL, GLOSS OR FLAT; ALSO IN FUME-RESISTING TYPES.**


HEAVY BAND
SMOOTH THREADS WITHOUT BURR
OPENINGS THREADED IN PERFECT ALIGNMENT
WALL THICKNESS ALWAYS AMPLE
THREADS CUT ACCURATELY TO GAUGE
CHAMFERS FOR EASY THREADING IN PIPE


FLANGES ACCURATELY MACHINED AND FINISHED TO HOLD A GASKET
OPENINGS IN PERFECT ALIGNMENT
WALL THICKNESS ALWAYS AMPLE
FLANGE FACES AT TRUE RIGHT ANGLE TO LINE OF FLOW
DRILLING PROPERLY ALIGNED AND SPACED

## THESE *PRECISION MACHINED* FITTINGS

# REDUCE INSTALLATION COSTS!

● Take a good look at a Crane standard fitting. You'll understand, when you inspect it closely, why the labor cost of installing Crane fittings into line is so low—why pipe connections *stay tight!*

Flanged fittings have faces accurately machined at a true right angle to the line of flow, with drilling properly aligned and spaced—finished properly to hold a gasket.

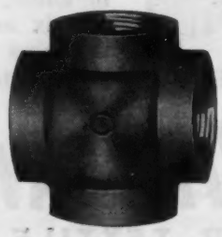
Examine a Crane screwed fitting—its threads are cut true to gauge, without burr, and ends chamfered for easy entrance. Openings are *accurately* aligned. Wall thickness is always ample to withstand shock and strain. These screwed fittings are *precision machined*—by exclusive Crane-designed threading and tapping machines!

You'll pay no more for Crane fittings, yet you will save much in installation time and repairs to the line if you specify them for all piping work! They're economical too—built to stand up under numberless reassemblies and can be used time and again!

Make a note now to specify Crane standard fittings! Few items in general use throughout your plant so well illustrate how Crane "care in manufacture" will save you money day after day!

Standard Cast Iron Elbow

Standard Malleable Iron Tee


Standard Cast Iron Cross

Standard Cast Iron Reducer

Standard Malleable Iron Return Bend

Standard Flanged Tee

Standard Flanged Elbow

# CRANE

CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO, ILLINOIS • NEW YORK: 23 W. 44TH STREET

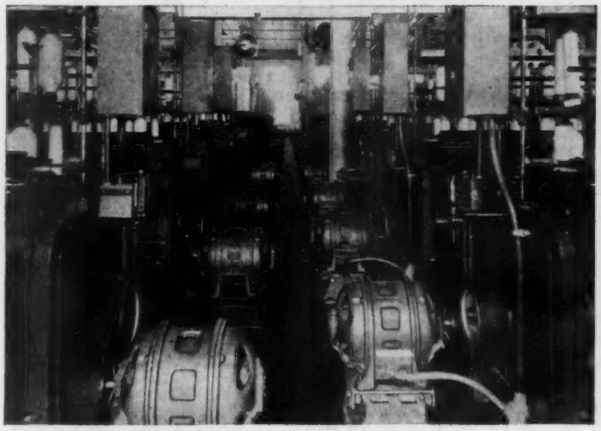
*Branches and Sales Offices in One Hundred and Sixty Cities*

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

## *More and more textile engineers say:*

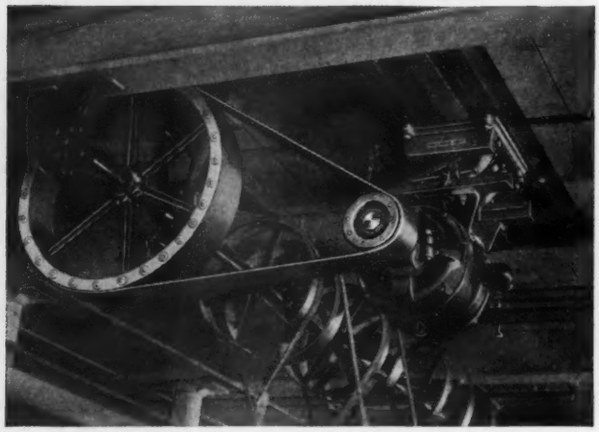
# "The most practical motor drive"

*— for individual machines*



87 ROCKWOOD *Spinning Frame Drives at Erwin Cotton Mills, Cooleemee, N. C. Motors are 8" off floor.*

*— for lineshafts*



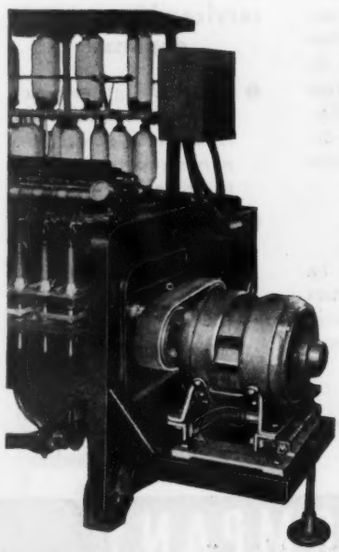
*The* ROCKWOOD *Ceiling Drive eliminates maintenance and insures uniform shaft speeds.*

THE preference for ROCKWOOD Drives is steadily growing. Each installation wins additional enthusiastic endorsement. The news of ROCKWOOD DRIVE performance spreads from mill to mill. More and more textile engineers agree that here, indeed, is a drive offering many outstanding advantages.

For what other type of drive offers the high *sustained* power-transmitting efficiency of flat belts operating under *controlled* tension? What other drive provides a simple, sure way to *establish* proper belt tension required for the load? What other drive *automatically maintains* the correct belt tension? What other drive is so inexpensive and easy to install? What other drive can equal the ROCKWOOD Drive in enduring dependability and low-cost maintenance?

Before you change any drives in your mill—either for lineshafts or individually driven machines—investigate ROCKWOOD Drives. ROCKWOOD engineers will gladly make practical recommendations—without obligation.

**THE ROCKWOOD MANUFACTURING CO., INDIANAPOLIS, INDIANA**
*Division of General Fibre Products, Inc.*

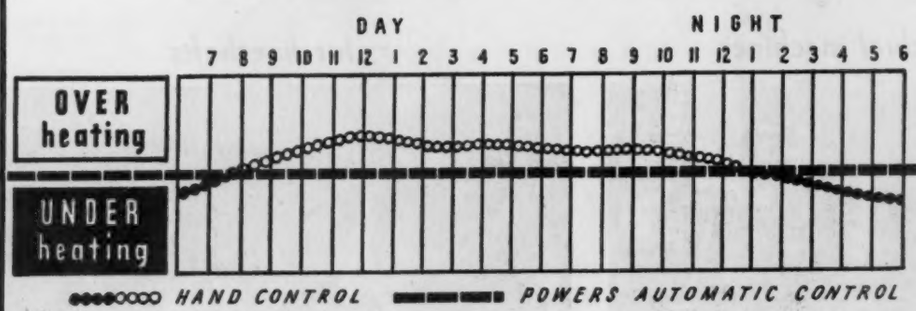


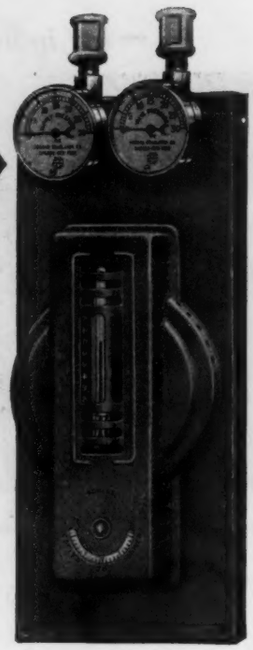
Do you prefer shelf-mounting for motors driving spinning frames? Here is a practical application—one of the many ROCKWOOD Drives at Rowan Cotton Mills, Salisbury, N. C.

**ROCKWOOD**
**SHORT-CENTER FLAT BELT DRIVE**

DEALERS WITH WAREHOUSE STOCKS
IN ALL PRINCIPAL CITIES

# STABILIZED ROOM TEMPERATURE



POWERS
Heavy Duty
Thermostat

## Often pays back the cost of **Powers Control** the first year

### Cuts heating costs 15 to 40 per cent

Here are some typical reductions: Branch River Wool Combing Co. reports 25%; Walton Cotton Mill 33⅓%; Scott & Williams, 30%. Many users state that fuel savings *alone* obtained with Powers Control have paid back its cost during the first year of operation. Savings gained through eliminating OVER-heated rooms in your mill will more than offset increased fuel costs.

### Stops hot and cold spots

If your buildings get OVER-heated in one section and UNDER-heated in another, use Powers Control and get EVEN distribution of heat at the right temperature in each department.

### Insures uniform quality of product

When Temperature and Humidity fluctuate, the moisture regain of the material being processed varies, affecting its tensile strength and elasticity. Therefore, the uniform temperature maintained by Powers Thermostats, helps to insure uniform quality of product.

### Prevents over-loading humidifiers

By preventing over-heating of rooms, which causes over-loading of humidifiers, you can get more accurate control of humidity, reduce the cost of humidification and upkeep of humidifying system.

### Reduces production delays

OVER-heating and UNDER-heating of room temperatures, contract and expand material in process, as well as delicate parts of knitting and similar machines. OVER and UNDER-heating, during the night and week-end "shut-downs," and during the day are one of the chief causes of stops—troubles and delays in starting looms, spinning frames, knitting and finishing machines.

You can end most of these troubles by stabilizing temperature in your mill. Regulate it *automatically*. POWERS Control will do this for you *day and night*, year after year with unfailing accuracy and dependability. It can be easily adjusted to keep each department at whatever temperature promotes greatest efficiency.

### Increases output of workers

In eliminating the discomfort caused by OVER-heated rooms, Powers Thermostats reduce colds and other ills caused by keeping rooms too hot. Employees make fewer mistakes, and their output is increased.

### Often gives 15 to 25 years of dependable service without repair expense

- Simple design and Durable Construction—No multiplicity of delicate moving parts to get out of order.
- Neither the excessive heat of Summer nor the vibrations set up by textile machinery disturb the temperature adjustment of Powers Thermostats.

**Phone or write today for estimate » » » there's no obligation**

## THE POWERS REGULATOR COMPANY

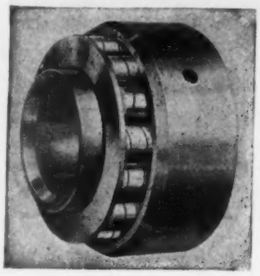
*40 Years of Specialization in Automatic Temperature Control*

Offices in 42 Cities—See Your Telephone Directory

CHICAGO—2739 Greenview Ave. NEW YORK—231 East 46th Street

ATLANTA—306 Bona Allen Bldg. BOSTON—125 St. Botolph St. PHILADELPHIA—Hardt Bldg.
BUFFALO—232 Delaware Ave. CLEVELAND—754 Hippodrome Annex READING—1121 No. 11th St.

# A Weave Room Conversation



**"This loom turns over so easy I can actually run it by hand for several picks."**

"Yes, Miss Clark, this is one of the looms that I asked our agent to purchase with Hyatt Roller Bearings on the crankshaft, camshaft and rockershaft."

"The loom is so clean, too, Mr. Wilson. No oil or grease ever seems to leak out of the crankshaft bearings."

"That's because they are sealed, Miss Clark, and we only lubricate them half a dozen times a year."

"The weavers, especially we girls here in the mill, certainly appreciate it that you bought roller bearing looms, Mr. Wilson. We're not so tired at the end of our shift."

*Hyatt-Equipped Looms will help you produce more and better cloth at less cost and your weavers, like Superintendent Wilson's operatives, will appreciate them, too. Hyatt Roller Bearing Company P. O. Box 476, Newark, N. J.*

HYATT

ROLLER BEARINGS

PRODUCT OF GENERAL MOTORS

*Labels*
ALL KINDS

*Tickets*
AS USED ON BLANKETS

*Hang Tags & Bolt Ends*

*Stickers*
FOR IDENTIFICATION AND CONSTRUCTION SPECIFICATIONS

*Riders*

*Box Tops*
FOR HOSIERY

*Bands*
FOR ALL BOLT GOODS HOSIERY OR SHIRTS

*These are*

# SALES BUILDERS

*For*
SOUTHERN TEXTILES

***NEW DESIGNS · REPRODUCTIONS***

# JACOBS GRAPHIC ARTS COMPANY

CLINTON · S.C.

# A WHITER MILL WHITE

## *that stays white*

**Not just an *improved* mill white, but a new mill white scientifically made to meet TODAY'S factory conditions. Better in 9 ways.**

If you were to write *your own* specifications for the ideal mill white, you'd probably say—"I want the whitest white that can be made, a white that will *stay* white over a longer period, and that will give me better lighting, better appearance, and better protection—at lower final costs." Now compare DULUX Mill White in these respects with other mill whites on the market.

**DULUX MILL WHITE IS BETTER IN NINE DIFFERENT WAYS:**

1. **WHITER at the start**
2. **STAYS WHITER**
3. **DRIES QUICKER**
4. **HIDES BETTER**
5. **HIGHER GLOSS**
6. **SELF-LEVELING**
7. **MORE DURABLE**
8. **STAYS CLEANER**
9. **EASILY WASHED**

DU PONT
REG. U.S. PAT. OFF.

**DULUX**

REG. U.S. PAT. OFF.

**MILL WHITE**

**SEND FOR FREE BOOKLET**

E. I. du Pont de Nemours & Co., Inc.,
Finishes Division, Wilmington, Delaware

*Gentlemen:* I would like to receive additional information about DULUX Mill White, the whiter mill white that stays white longer. Please send me your booklet which, I understand, will place me under no obligation.

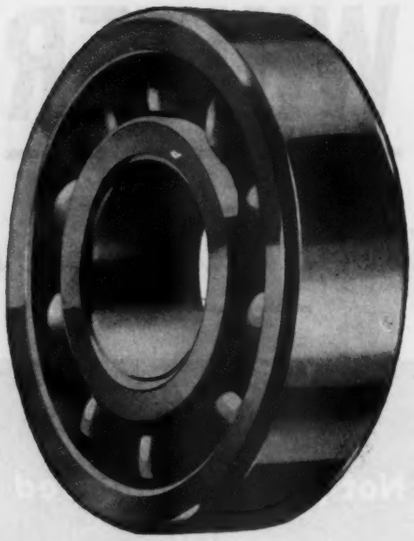
Name.....

Address.....

# FAFNIRS

## *"Eliminate costly Idleness"*

## *says* BIRD MACHINE CO.



Enforced idleness is always costly, particularly so in production machinery such as this new Bird Gyro-Balanced Extractor. With full realization of this important fact Bird has done everything to avoid idleness. On the completeness with which anti-friction bearings are used depends no small measure of the success of this machine.

A large Duplex Fafnir Ball Bearing with heavy duty bronze retainer takes the thrust load of the revolving basket. Unique is the method of suspending the entire machine from pedestals on universal joints, the trunnions of which are mounted on Fafnirs — 24 bearings in all being used. Immediate adjustment is thus afforded during acceleration and for out-of-balance loads.

Greasing once every 2 or 3 years is the only attention these Fafnir Ball Bearings need. Full protection is a lasting feature which assures new machine efficiency for long periods of time and, as Bird says "eliminates costly idleness."

It pays to fortify machines with Fafnirs. THE FAFNIR BEARING CO., *New Britain, Conn. Representatives also at:* Atlanta, Ga. . . . Houston, Tex. . . . Charlotte, N. C. . . . Boston, Mass. . . . Dallas, Tex. . . . Birmingham, Ala.

KEEP *abreast of new developments. Read Fafnir's house organ, "The Dragon." We will gladly put you on the mailing list.*

*New Bird Gyro-Balanced Extractor, completely equipped with anti-friction bearings.*

*Safeguarding Quality*

# FAFNIR BALL BEARINGS

# WOULDN'T YOU PAY $4,000 TO save $11,900?

*One cotton mill* did by installing a Taylor System of Slasher Control. Another remarkable example of the efficiency and economy of properly engineered temperature control.*

TEMPERATURE CONTROL brought a return of over $7,000 in 48 weeks' time.

It effected savings in this mill that were nearly three times its cost. Is such control worth considering in your slasher?

Taylor Engineers went into this mill. They made a thorough survey of the slashing process. They worked out a system of temperature control to meet that mill's special problems. They supervised installation of this tailor-made system and turned it over in successful operation.

*The results?* A saving of 72 tons of coal . . . a saving on cotton filling and commission cost of over $5,000 . . . and a saving of over $6,000 on the per pound cost of cloth through an increase in production. A total of over $11,900 saved in 48 weeks!

So much for money savings. What other results came from this installation? Uniform warps . . . decreased shedding . . . decrease in warp loom stoppage . . . more even cloth weight . . . decrease in steam consumption.

***Proof is in results***

During the many years Taylor engineers have been designing and installing Temperature Control Systems in textile mills, they have been responsible for many specific examples of money savings, product improvement, and production efficiencies. This specialized experience in many different situations and problems is at your service. A survey of your mill will bring out your specific needs and recommendations for a system to meet them. The Taylor principle is that there can be no one system for every situation. Yours should have special consideration.

To get this help, ask for a Taylor Representative by writing Taylor Instrument Companies, Textile Engineering Dept., in Rochester, N. Y., Atlanta, Ga., Boston, Mass., or Toronto, Canada.

*Name of mill on request.

Taylor

INDICATING RECORDING · CONTROLLING

TEMPERATURE, PRESSURE *and* FLOW INSTRUMENTS

# Follow This Banker's Precedent

## Use Group Analysis and Prescription

Like thousands of his kind, this able and highly respeted banking executive is entrusted with the investment of millions of other people's money. But in spite of his abilities he does not play a lone hand. In fact he is a leading exponent of the "group analysis and prescription" principle. While he reserves the right to exercise his own initiative and to make his own decisions, he does not hesitate to consult with his immediate colleagues and with authoritative outside opinion regarding investment problems.

Chemical processing executives in the textile industry can follow this man's precedent with profit. Textile chemistry is so diversified and its research so prolific that no plant executive can keep entirely up-to-date on all its phases. Therefore he must do the next best thing,—utilize broad outside experience through consultation.

Arnold-Hoffman offers such a consultation service based on more than a century of contact with all branches of the textile industry, a complete, modern laboratory, and a staff of specially trained chemists.

Since this service is free to all users of A-H Products, actual or potential, why not use it when faced with knotty processing problems or when checking up on your routine methods?

**CHEMICALS**

Sizing Gums and Compounds . Soluble Gums . Softeners . Soluble Oils . Tallow . Waxes . Soaps . Flour Dextrines . Starches . Pigment Colors and Lakes . Ammonia . Acids . Blue Vitriol . Borax . Bichromate of Soda . Bichromate of Potash . Liquid Chlorine . Chloride of Lime . Caustic Soda (solid and flaked)

# Arnold, Hoffman & Co., Inc.

Established 1815. Plant at Dighton, Mass.

**PROVIDENCE, R. I.**

New York • Boston • Philadelphia • Charlotte

## THE PRODUCT

New Departures, made in the world's largest ball bearing factory, will fulfill practically every service requirement. The diversified line provides for all conditions of load and mounting encountered in the modern machine. » » » The new 128-page Catalog contains full listing of all new types and sizes, new list prices and important mounting directions. Mailed upon request. Ask for Booklet S. Ninth edition.

## ITS APPLICATION

Even the best bearing can deliver utmost service only when properly applied. New Departure engineers, with an unparalleled background of research and experience, are ready and willing to recommend bearings best fitted for your particular purpose. » » » New Departure's consultant service is authoritative, confidential and without charge to you. The New Departure Manufacturing Company, Bristol, Conn.

# NEW DEPARTURE BALL BEARINGS

2177

# THE WORLD'S GRANDEST DRINK

Ewing Galloway

## . . . but untreated natural water prevents high quality textiles.

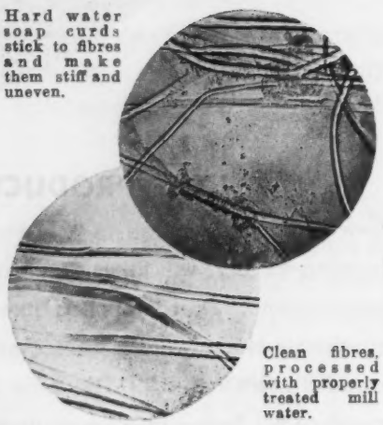
● A cup of water from the old farm pump . . . cool and clear and so refreshing. Can water be purer than this? Yet let it stand, perhaps coagulate it, and impurities would settle out . . . tiny bits of sand and clay and organic waste. And a chemist would find dissolved gases . . . salts of calcium, magnesium and iron.

These minute impurities affect the quality of finished textiles when used in your mills. The dissolved compounds of calcium and magnesium cause water to be hard . . . and in cleaning processes, when soap is added, the suds are merely sticky curds. These curds adhere to the tiny fibres in processing and the fibres become stiff, uneven and harsh-feeling in finished goods. (See photomicrographs at the right.) Other impurities may cause smudgy dyeing, rust spots in bleaching or high yarn breakage.

What impurities does your mill water contain? Permutit has studied the problem of textile water for more than twenty years. Our researches prove that practically every supply of natural mill water must be properly treated to enable high quality finished goods to be produced.

Over 1500 textile mills now use Permutit Water Treating Equipment. Consider what it would save you. Quality is higher . . . reruns and rejections are sharply cut. There is a saving in materials. Boiler scale is entirely eliminated, so tube replacements and cleaning are very much reduced. Records show that the equipment has often paid for itself, *in savings*, within a year's time . . . almost always within two years.

We will gladly make a free survey of your mill and recommend suitable water treatment. Send for our free Booklet, "Reducing Textile Costs and Troubles." Write The Permutit Company, 330 West 42nd Street, New York City.



Hard water soap curds stick to fibres and make them stiff and uneven.

Clean fibres, processed with properly treated mill water.

Permutit

*Water Treating Equipment*

54—6138—47

# *Greater* WEAVABILITY *for your* WARPS

**VELVEEN XX insures greater weavability. Warps of unusual smoothness and strength result from sizing with this excellent starch. VELVEEN XX *reduces your warp-end breakage and shedding.* This sums up the opinion of many of America's leading mill men who are consistently using VELVEEN XX STARCH.**

## VELVEEN XX STARCH

## STEIN, HALL & COMPANY, INC.

EST. 1866

285 MADISON AVENUE NEW YORK CITY

BOSTON PROVIDENCE CHICAGO PHILADELPHIA CHARLOTTE SAN FRANCISCO
TORONTO ROCHESTER BUFFALO LOS ANGELES

**HEADQUARTERS FOR ALL TEXTILE STARCHES, DEXTRINES, GUMS AND TAPIOCA FLOURS**

# *Prints* that compel admiration ...and *Sales!*

**--easily produced with these**

## ONYX Printing Gums

## SILTEX GUM AP

*Reg. U. S. Pat. Off.*

● **APPLICATION** Especially compounded for application printing. Produces extremely fine lines and delicate designs with absolute fidelity . . . **both on face and back of cloth.** Blotches print clear and bright.

## SILTEX GUM D

*Reg. U. S. Pat. Off.*

● **DISCHARGE** Compounded to fit the needs of Discharge printing. Produces much whiter and cleaner discharges than ever before possible. Deep penetration with finest lines.

## ONYX HYDRO VAT GUM

● **DISCHARGE . . . with Vat Dyes.** A new ONYX deve'opment! Ready to use, merely add your dyestuffs. Assures clear work—fine lines—deep penetration—easy washing out.

**WORKING ADVANTAGES**

These ONYX printing gums give prints new life — sharper, clearer prints — more even tones, from the finest lines to the largest blotches. Discharges are whiter and cleaner.

All gums are free from grit — penetrate deeply—produce no foam in box—wash out easily in cold water. Highly concentrated, they stand up well under large amounts of solvent. Will not precipitate or "liver" with difficult dyestuffs.

● ***MAKE TESTS! Write for samples, stating fabric and type printing.***

**ONYX OIL & CHEMICAL CO.**

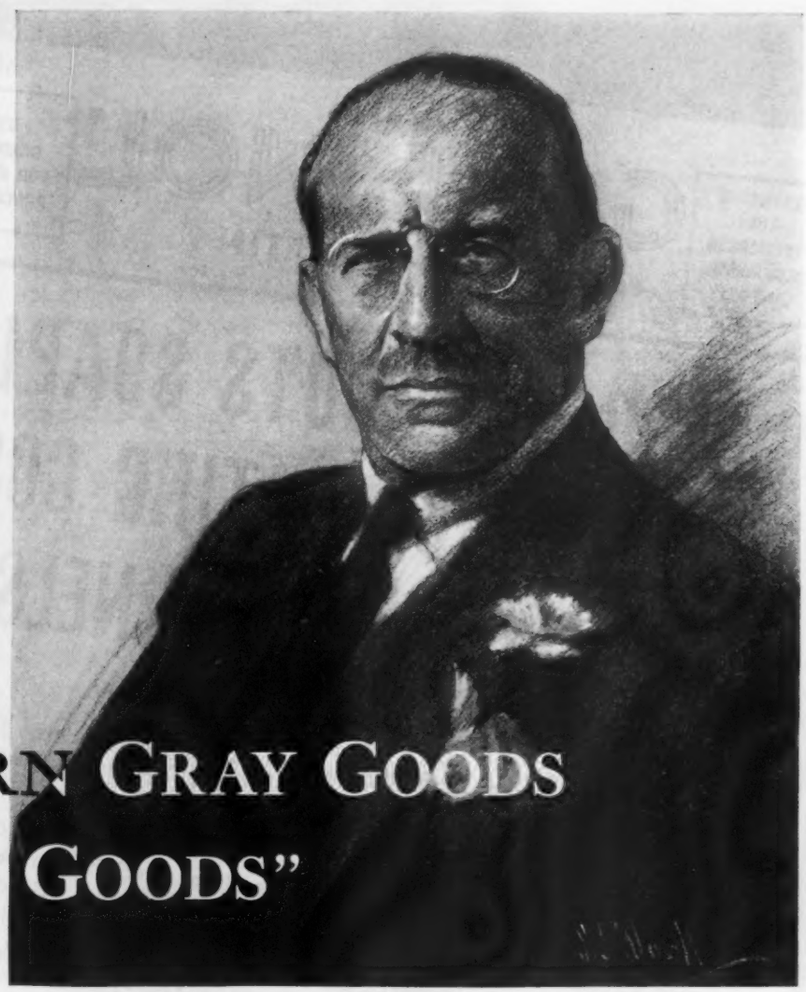
*Specialists on Finishing Materials.*

**Jersey City, N. J.**

South. Repr. E. W. Klumph, Charlotte, N. C.
Midw. Repr. Maher Color & Chemical Co., Inc., Chicago.
In Canada: Onyx Oil & Chemical Co., Ltd., Montreal.

*"Helped by your silvery metal*

# WE TURN GRAY GOODS *into* GAY GOODS"



DR. CAMILLE DREYFUS, *President of the Celanese Corporation of America, discusses the problem of the textile manufacturer*

"CELANESE fabrics have won a reputation for unusual clarity and 'bloom.' With color so important a part of the fashion picture today, a textile manufacturer must be up to the minute not only in his ideas, but in his equipment to produce the right colors at the right time.

"To keep pace with the rapid changes of fashion, Celanese fabrics are made in the *greige* before they're dyed. Then as new colors develop sudden popularity, we run these 'gray goods' through our vats and kiers.

"Monel Metal helps us at every step. It saves time between tints, because its smooth hard surface absorbs no color, needs no extended boiling out or lengthy cleaning. And so it cuts down *materially* the time between orders received and orders shipped.

"Moreover, in contact with dyestuffs, Monel Metal is *stable*. It doesn't react with the dye bath, and that's a big help in keeping our shades invariably true. It's doubly important this season when the demand is all for clear pastels of great brilliance...such typical Celanese tints as 'perfume green' and 'yachting yellow.'

"Monel Metal also cuts down repairs to dyehouse equipment due to wear, and replacements due to failure. It helps us render to our customers the *prompt* and *unfailing* service that they expect of Celanese".

☼ ☼ ☼

Monel Metal is widely used in textile bleaching and finishing plants and in laundries. Also in chemical works and in plants that produce fine drugs and pharmaceuticals. And by food packers and canners, by hotels, restaurants, and hospitals.

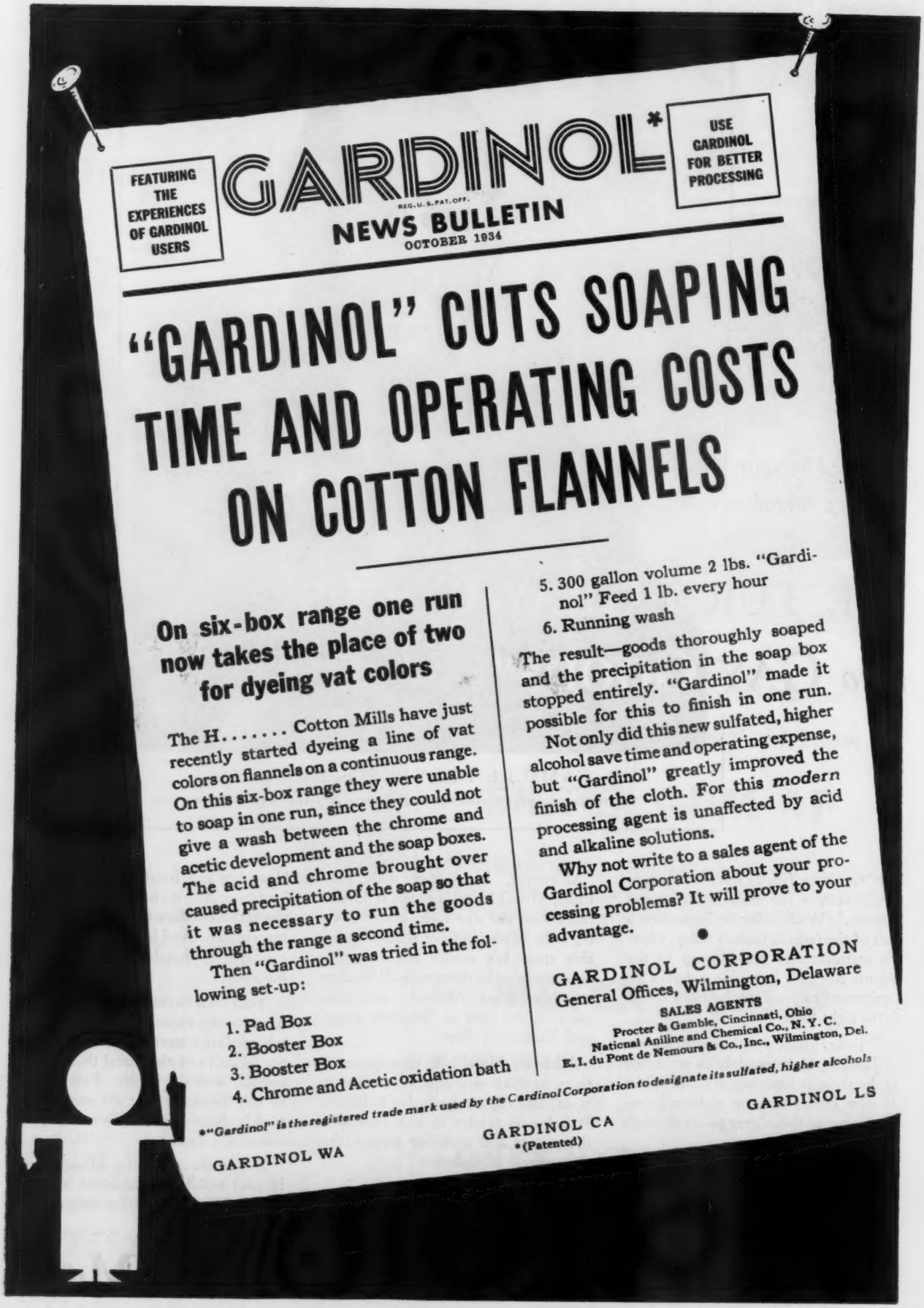
Your own kitchen...with its Monel Metal sink, cabinet tops, range top, table and hot water tank...demonstrates the qualities of the metal that make it popular with the public. Folks prefer to buy products that are rust-proof, readily cleaned, not easily marred, and enduringly beautiful.

If you are not using Monel Metal in your business, investigate its possibilities. Write, today, for information.

THE INTERNATIONAL NICKEL COMPANY, INC., 67 Wall St., New York, N.Y.

Monel Metal is a registered trademark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

**Monel Metal**


FEATURING THE EXPERIENCES OF GARDINOL USERS
GARDINOL*
REG. U. S. PAT. OFF.
NEWS BULLETIN
OCTOBER 1934
USE GARDINOL FOR BETTER PROCESSING
"GARDINOL" CUTS SOAPING TIME AND OPERATING COSTS ON COTTON FLANNELS
On six-box range one run now takes the place of two for dyeing vat colors
The H..... Cotton Mills have just recently started dyeing a line of vat colors on flannels on a continuous range. On this six-box range they were unable to soap in one run, since they could not give a wash between the chrome and acetic development and the soap boxes. The acid and chrome brought over caused precipitation of the soap so that it was necessary to run the goods through the range a second time.
Then "Gardinol" was tried in the following set-up:
1. Pad Box
2. Booster Box
3. Booster Box
4. Chrome and Acetic oxidation bath
5. 300 gallon volume 2 lbs. "Gardinol" Feed 1 lb. every hour
6. Running wash
The result—goods thoroughly soaped and the precipitation in the soap box stopped entirely. "Gardinol" made it possible for this to finish in one run.
Not only did this new sulfated, higher alcohol save time and operating expense, but "Gardinol" greatly improved the finish of the cloth. For this modern processing agent is unaffected by acid and alkaline solutions.
Why not write to a sales agent of the Gardinol Corporation about your processing problems? It will prove to your advantage.
GARDINOL CORPORATION
General Offices, Wilmington, Delaware
SALES AGENTS
Procter & Gamble, Cincinnati, Ohio
National Aniline and Chemical Co., N. Y. C.
E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.
*"Gardinol" is the registered trade mark used by the Cardinol Corporation to designate its sulfated, higher alcohols
GARDINOL WA
GARDINOL CA
*(Patented)
GARDINOL LS

# RHOADS TANNATE BELTING

**Have you noticed the educational campaign of The Power Transmission Council now appearing in some of the leading magazines?**

THIS effort to help manufacturers applies to both major and smaller industries, and is more than a cooperative advertising campaign. It is a campaign that in a great number of plants will reduce cost of installation, power and up-keep. The material—data, examples, etc.—are from actual case studies made for the Power Transmission Clubs by the engineers of the Mechanical Power Engineering Associates. Mr. Victor A. Hanson, the chief engineer, is widely recognized as one of the foremost authorities on this subject.

The presentations are planned to give dependable information on the relative profit saving and profit making possibilities of the **Modern Group Drive** method of power transmission as compared with direct motor driven machines. It is especially applicable to the cotton manufacturing industry.

In Modern Group Drive set-ups, **Tannate Leather Belting**, plays an important part in giving lower operating and maintenance costs and increased production. Its unusual strength, resiliency, pliability and tractive grip, longer belt life, fewer stops for take-ups and repairs conserve your power, reduce up-keep, and often give increased production.

By using Modern Group Drives, you can often save space and increase efficiency by installing the Rockwood Pivoted Motor Base in connection with **Tannate Leather Belting.** Specify these when plans are drawn for your next installations or for modernizing older ones.

Our Engineering Department will be glad to help you with planning Modern Group Drive installations. Do not hesitate to write us.

## J. E. RHOADS AND SONS

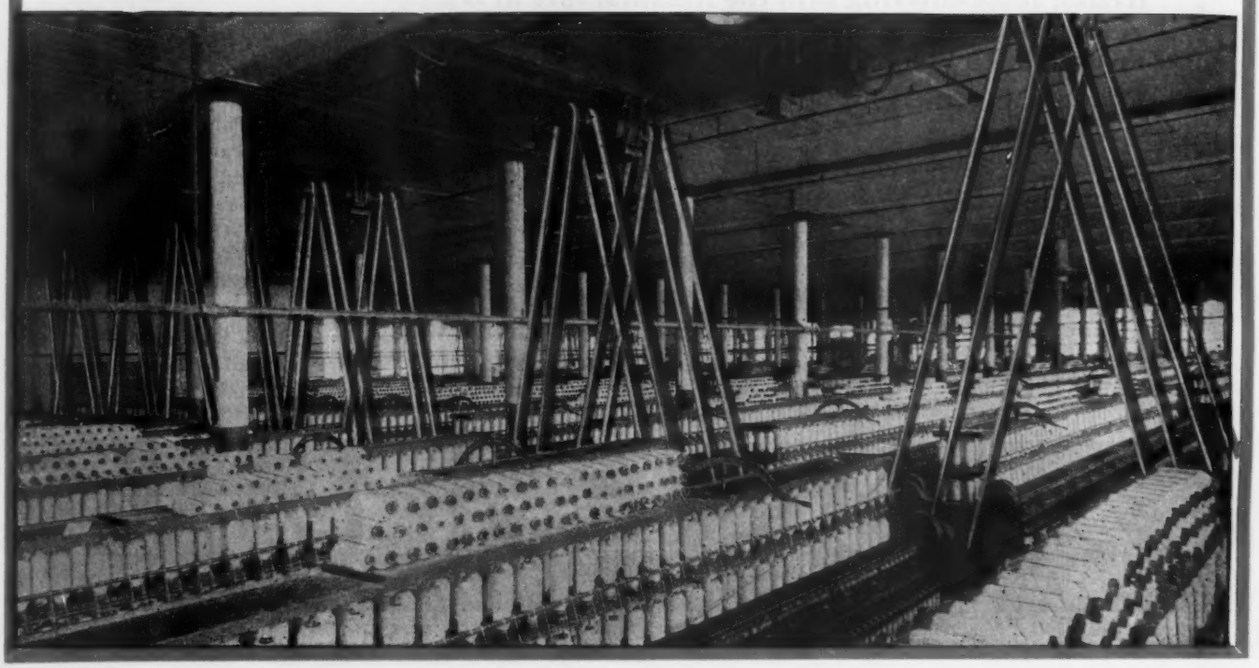
**PHILADELPHIA, 35 N. Sixth St.**

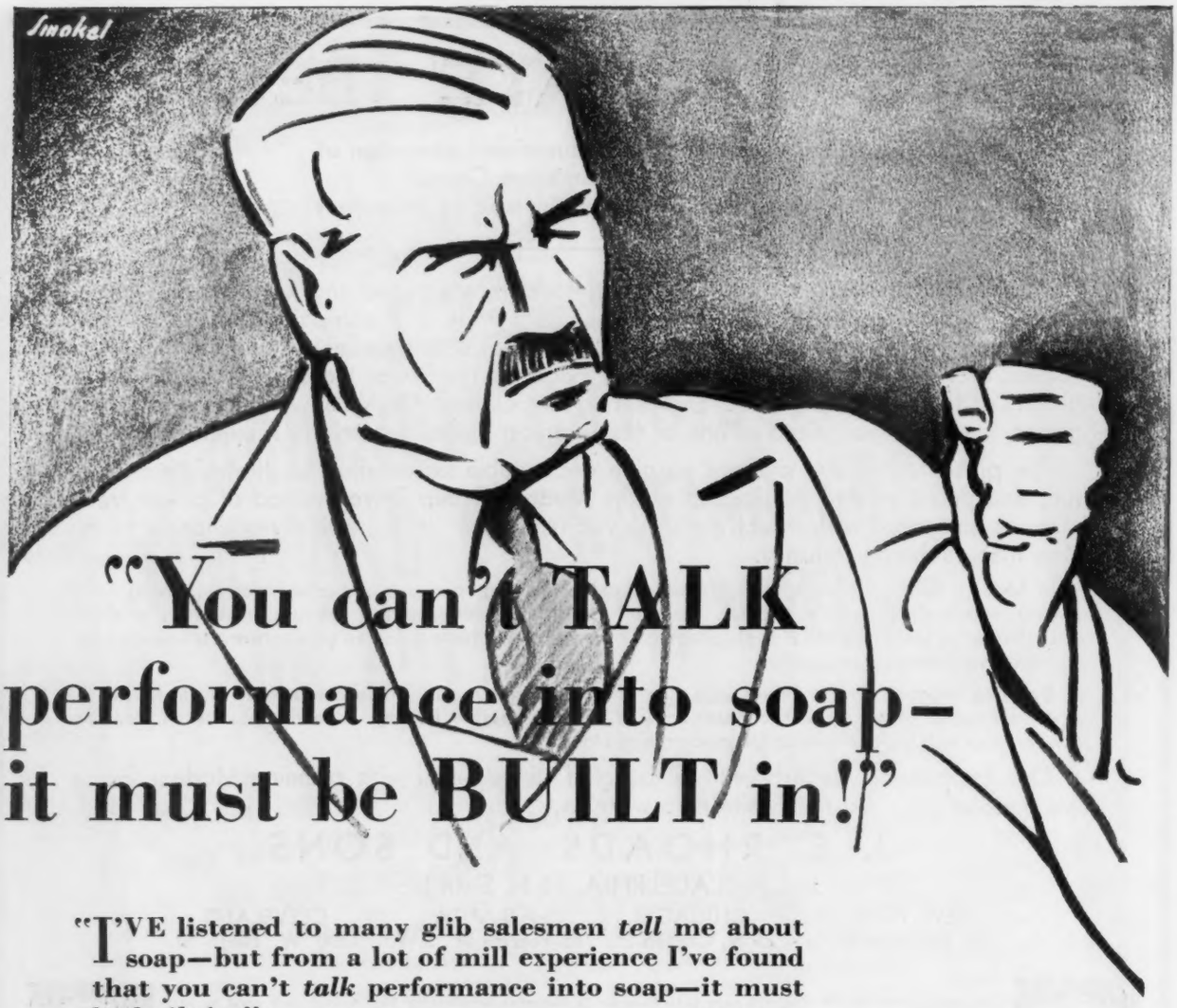
| NEW YORK | CHICAGO | ATLANTA | CLEVELAND |
|---|---|---|---|
| 102 Beekman St. | 26 N. Clinton St. | 88 Forsyth St., S.W. | 1200 W. Ninth St. |

RHOADS TANNATE

**The superintendent of this mill says that Tannate is the most satisfactory belt he has ever used on his four-frame spinning drive. The flexibility and extra grip of Tannate running over small pulleys at high speeds gives more turns on front rolls and much longer life than other makes of belting. They also use Tannate on looms and on motor and counter drives.**

RHOADS TANNATE






# "You can't TALK performance into soap—it must be BUILT in!"

"I'VE listened to many glib salesmen *tell* me about soap—but from a lot of mill experience I've found that you can't *talk* performance into soap—it must be *built* in."

You're right, Mr. Superintendent, that's been our feeling since entering into the manufacture of textile soaps thirty years ago. And that's why every type of Armour soap is subject to strict laboratory control.

To assure the uniformity of product that is so vitally necessary in the satisfactory processing of your goods, Armour and Company have soaps for every type of processing and other mill uses; and a complete and practical Chemical Research Department that will gladly render advice and suggestions in connection with any of your soap problems.

Just a short note on your business letterhead will bring this service to you—without cost or obligation.

Flint Shredded Chips
Industrial Chips
Pure Palm Chips
Pure Palm Solid
Blended Palm Solid
Topaz Chips
Neutral Olive Chips
Olive Oil Solid
Olive Oil Bars
Olive Fig Soap
Wool Scouring
Flotilla Flakes

INDUSTRIAL SOAP DEPARTMENT
ARMOUR AND COMPANY
1355 W. 31st STREET • CHICAGO, ILLINOIS

# Do you use *Gums?*

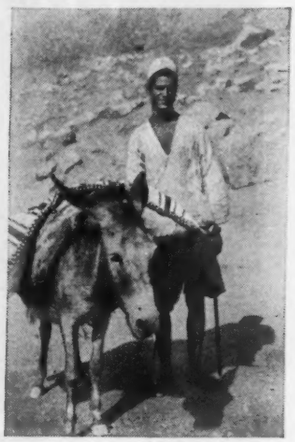
## ARABIC · KARAYA · TRAGACANTH... *for Printing, Finishing, etc.*

## *The Story of Gum Tragacanth*

1. Tragacanth Gum Bush.

2. Mountainous regions of Persia in which the gum is gathered. Only sand, rocks and the Tragacanth shrubs from 1 foot to 2 feet high.

3. Tapping the shrub. The rocks, etc., must be dug away to expose the stem—which is then slit with a sharp knife to let the gum ooze out.



4. Bringing the gum down from the mountains. Only small donkeys or camels can be used.

5. Sorting into grades. Wages 1 Kran (about 6¢) per day.

6. Weighing and packing in cases.

7. On its way to the coast. Once more on donkey or camel back.

8. The final stage, in the river steamers bound for the port, thence on its final journey to London, Marseilles or New York.

• For over 20 years we have been importing and milling gums for all purposes and can supply you with any type or quality.

Our large stocks of Arabic, Karaya and Tragacanth Gums are available in all grades and in any form—whole, crushed, granulated or powdered. These gums may be had from stock, undiluted, unblended in the original import packages, or milled to your own specifications.

The facilities of our laboratories are at your disposal without obligation. Write us today of your special requirements or send us samples of what you now use and we will match with counter samples and submit quotations.

## JACQUES WOLF & CO.

*Manufacturing Chemists and Importers* • Passaic, New Jersey

*Warehouses:* Providence, R. I. • Philadelphia, Pa. • Utica, N. Y. • Chicago, Ill. Greenville, S. C. • Chattanooga, Tenn.

# SAVE EXPENSIVE DYESTUFFS

*Every Ounce Lost is Money Wasted*

GRASSELLI Formic Acid is not only certain and efficient in exhausting the dye-bath, but it is so mild and safe that it cannot possibly tender the most delicate fabrics. It is ALWAYS of the same high uniformity in quality, and crystal clearness. Will never darken when exposed to light.

Insist on "Grasselli Grade" when ordering formic acid. It will save you much in expensive dyestuffs, and produce brighter, unclouded colors, level even in cross-dyeing.

Prompt shipment in 120 lb. carboys from any of our branches listed below.

**THE GRASSELLI CHEMICAL CO.**
INCORPORATED
CLEVELAND OHIO

*New York and Export Office:* 350 Fifth Avenue

| | | | |
|---|---|---|---|
| Albany | Charlotte | Milwaukee | Pittsburgh |
| Birmingham | Chicago | New Haven | St. Louis |
| Boston | Cincinnati | New Orleans | St. Paul |
| | Detroit | Philadelphia | |

San Francisco, 584 Mission St. Los Angeles, 2260 E. 15th St.
*Represented in Canada by* Canadian Industries, Ltd.
Acids and General Chemicals Division—Montreal and Toronto

GRASSELLI

**LET US ALSO QUOTE YOU ON**

Acetic Acid
Acetate of Soda
Acetate of Lead
Alums, U. S. P.
Aqua Ammonia
Barium Chloride
Bi-Chromate of Soda
Bi-Sulphate of Soda
Bi-Sulphite of Soda
Carbonate of Soda
Caustic Soda
Solid and Flake
Chloride of Lime
Chloride of Zinc
Epsom Salts
Glauber's Salt
Lactic Acid
Muriatic Acid
Nitric Acid
Oxalic Acid
Phosphate of Soda
Silicate of Soda
Sulphate of Alumina
Sulphate of Soda, Anhydrous
Sulphite of Soda
Sulphide of Soda
Sulphuric Acid
Tri-Sodium Phosphate

# FORMIC ACID

85% AND 90% COMMERCIAL

*gives a more complete exhaust of the dye bath*

# No Complaints *in* 26 Years !

**When it comes to service, we are proud of our record---"No Complaints in 26 Years!" In other words, ever since we began manufacturing and distributing Diastafor, we have given our customers prompt and efficient service. This famous de-sizing agent is always delivered where you want it and when you want it.**

**Don't take chances! Order Diastafor every time and avoid the danger of expensive delays. Remember, in addition to service you get a product whose quality and uniformity is unquestioned.**

**For complete details, see our technical expert or write to---**

## *Fleischmann's* DIASTAFOR

**DIASTAFOR DEPARTMENT**

**STANDARD BRANDS, Incorporated**

**595 Madison Ave. New York, N. Y.**

*The cylinders in these rotary hat dyeing machines at the plant of G. W. Alexander Co., Reading, Pa., are made from stainless* ENDURO *18—8 SMo. Fabricated by the Berks Engineering Co., Reading, Pa.*

## WERE EQUIPPED WITH CYLINDERS OF STAINLESS ENDURO

Here's more evidence that will interest every textile engineer having trouble with corrosion or discoloration in dye machines! • The engineers at the G. W. Alexander Co., Reading, Pa., installed a perforated cylinder made from stainless ENDURO in one of their machines sixteen months ago. It was watched carefully. After a full year of steady operation it was found to be in the same condition as the day installed. No corrosion . . . no discoloration. • Today, the three machines have ENDURO cylinders. And work tables have been installed, made from ENDURO, too. • ENDURO has proved its value in dyehouse service. The facts are available. Write Republic for full data.

**ENDURO**
REPUBLIC'S PERFECTED
STAINLESS STEEL
Licensed under Chemical Foundation Patents Nos. 1316817 and 1339378, issued to, and only through, Republic Sales Offices and Authorized Distributors

CENTRAL ALLOY DIVISION MASSILLON, OHIO
**REPUBLIC STEEL CORPORATION**
GENERAL OFFICES YOUNGSTOWN, OHIO

Vol. 98

# COTTON

No. 10

October, 1934

W. R. C. SMITH, Publisher
T. W. McALLISTER, Editorial Director
ROBERT W. PHILIP, Editor

## Contents

### General and Technical—

Textile Labor Board Appointed After Winant Report and End of Strike --- 57
New Textile Labor Relations Board --- 57
Statement of Industry Committee --- 57
The Winant Board of Inquiry Report --- 58
Brief Chronology of Strike --- 59
Statistical Trend of Strike --- 59
Southern Textile Exposition Postponed --- 60
A Discussion of the Skein Test, by J. L. Delany --- 61
Martha Mills Install Latest Improvements in Power Feeder Control, by A. G. Stanford --- 65
New Long Draft Roving System --- 66
An Accurate Method of Measuring the Variations in Picker Laps, by R. A. Butler --- 68
MPEA—a Co-operative Means of Promoting Efficient Drives --- 70
Applying Anti-Friction Bearings as Replacement on Calenders, by H. H. Iler --- 72

### Current Textile Topics—

Talk of the Month --- 76
Industry Struggles Through a Morass of Abnormal Conditions --- 76
New England Mill Situation --- 76
Comment on the Cotton Market --- 78
What the Southern Mills Are Doing --- 82
New Textile Equipment and Publications --- 86
Timely News Items With a Textile Slant --- 88
Personal Notes About Men You Know --- 92
An Old-Timer Says --- 95

### How Other Men Manage—

A Method of Handling a Large Variety of Filling for the Weave Room --- 99
Preventing Slack Selvages on Drills --- 101
"Wash" Gives Information on 5.00-Hank Roving --- 103
May Flies Invade South Carolina Mill --- 105
Points on Loom Fixing (Part 5), by Ivar Moberg --- 107
"T. R." Gives a Simple Method of Cleaning Fly Frame Bolsters --- 109
Boftom Clearers on Fly Frames --- 111
A Practical Man's Views on the Textile Graduate --- 111
Dew-Point Control Prevents "Wetting Down" in Weave Room --- 114
Answers "Wash's" August Carding Questions --- 115
High and Low Card Flats --- 123

### Knitting Section—

Some Practical Suggestions on Dyeing Laboratory Samples on Silk Hose, by Harry White --- 129
Reduction or "Breaking Down" of Sulphon Cyanine Black B Dyes Eliminated in the One-Bath Method, by W. Ashton Daniel --- 131
Anticipating Silk and Yarn Needs, by M. M. Abrams --- 132
A Discussion of the Parts of Scott & Williams Knitting Machines (Plate 40) --- 135
Running "Rubber-Yarn" in Knit Goods --- 141
Conditioning Silk for Full-Fashioned --- 141
Minimizing Crepy Stitches in Dyeing, De-Gumming and Finishing --- 143
The Knit Goods Markets --- 145
Review of the Yarn Market --- 154

*Published Monthly by*

W. R. C. SMITH PUBLISHING COMPANY
Atlanta, Georgia

JOHN B. SHAW, *sales manager*, 39 Grove St., Auburndale, Mass. Boston Exchange, West Newton, 1031.
W. S. CUSHION, *vice president*, 506 The Arcade, Cleveland, Ohio.
JOHN C. COOK, *western manager*, Room 1500, 32 West Randolph St., Chicago, Ill.
W. A. MCGEE, *Carolina manager*, Box 1162, Charlotte, N. C.

*Publishers also of*

ELECTRICAL SOUTH
SOUTHERN HARDWARE
SOUTHERN POWER JOURNAL
SOUTHERN AUTOMOTIVE JOURNAL

PUBLISHED MONTHLY
ANNUAL SUBSCRIPTION—$1.00
CANADA—$1.50; FOREIGN—$2.00

MEMBER OF A. B. P.
MEMBER OF A. B. C.

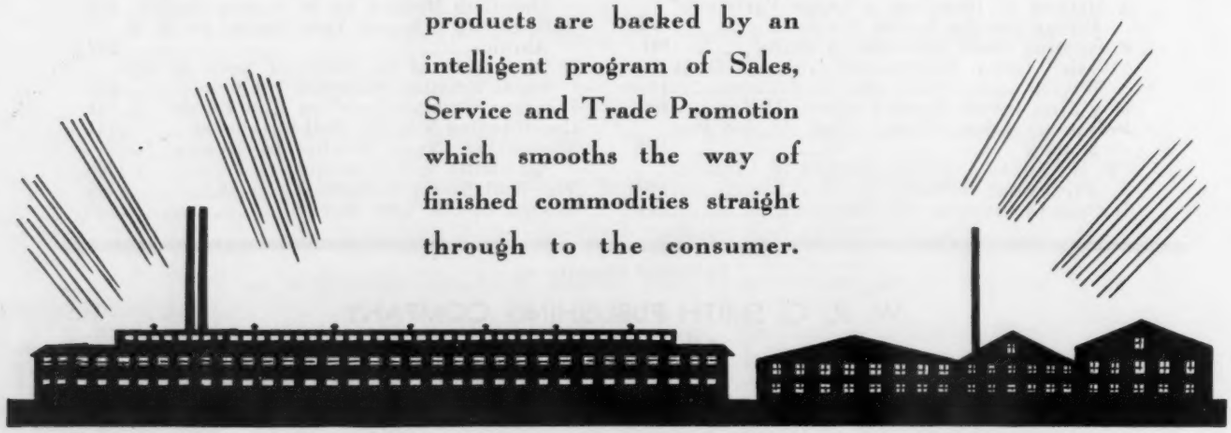
EDITORIAL AND BUSINESS OFFICES
Grant Building, Atlanta, Ga.

# SYMBOLS

## OF VALUE AND INTEGRITY

SPUN·LO ★ PREMIER ★ DUL·TONE

These trade names identify the dependable yarns and knitted fabrics produced by Industrial Rayon Corporation. And they also stand for the sincerity and whole-hearted cooperation that go into all of Industrial's business dealings. ◆ ◆ These worthy products are backed by an intelligent program of Sales, Service and Trade Promotion which smooths the way of finished commodities straight through to the consumer.



**INDUSTRIAL RAYON CORPORATION**

9801 WALFORD AVENUE CLEVELAND, OHIO

Vol. 98
No. 10

COTTON

October,
1934

# Textile Labor Board Appointed after Winant Report and End of Strike

WITH the acceptance by President Roosevelt of the report from his board of inquiry, headed by Governor Winant of New Hampshire, and the subsequent calling off of the general strike by its sponsors, the United Textile Workers of America, the situation in the textile industry entered into the second phase of resumption of operations, and the problems induced by the strike localized themselves into matters for individual settlement.

### New Textile Labor Relations Board

Acting upon the recommendations of the Winant report, President Roosevelt on September 26 issued an executive order creating a textile labor relations board of three, which will have jurisdiction in connection with the codes of fair competition of the cotton textile, silk and wool industries. The board is composed of Walter P. Stacy, chief justice of the supreme court of North Carolina; Rear Admiral Henry A. Wiley, retired; and James Mullenbach, of Chicago. These men constitute also the steel labor board, named several months ago to settle employer-employee disputes in the steel industry.

In appointing the board, the president followed closely the recommendations of the Winant committee, and his order provides for compensation and expenses; investigations, hearings, arbitrations, etc.; certification of employee elections for the purpose of designating the collective bargaining agency desired by the majority of the employees in a plant; procedure to be followed in handling appeals; establishment of rules and regulations and the filing of regular reports; a survey of hours and wages and wage differentials by the Department of Labor; a survey by the Federal Trade Commission to determine the ability of the industry to stand an increase in wages or reduction of working hours; the abolition of the Winant board of inquiry and the (Bruere) Cotton Textile National Industrial Relations Board; employment of necessary staff, etc.

The immediate task of the new board will be to act upon charges of discrimination against union members by the mills resuming operation. Many of the mills in starting up have done so with only one shift, and the strike committee is charging that those workers active for the union during and before the strike are being refused work. The facts are that one shift is being run because of a lack of orders sufficient to operate two shifts. A significant point in the matter of "discrimination" is that, with not enough work for all former employees, it would be discrimination of the highest order to replace loyal employees whose services are being used on one-shift with others. That would be discrimination against the loyal workers so displaced.

### Statement of Industry Committee

On September 27, George A. Sloan, chairman of the Cotton Textile Code Authority, issued the following statement authorized by the Code Authority:

"The Cotton Textile Code Authority has received and has given sympathetic consideration to the report of the Winant Board.

"In addition to findings, and recommendations for further studies, the board proposes certain changes in procedure. The Code Authority has always welcomed, and does now welcome, constructive suggestions.

"It is gratifying that the findings of the Board sustain the position of the cotton textile industry as follows:

"1. Working conditions in the industry have been vastly improved under the code; and

"2. Industry-wide collective bargaining with the United Textile Workers is not now feasible.

"The Winant Board further finds that the facts now available do not justify it in recommending any change in hours and wages. We feel that the Winant Board made a distinct contribution to this subject when it said:

" 'It is not a question of protecting actual profits against the needs of workers for more adequate pay. The difficulty goes beyond this. From such statistical information as is available to the board, it is apparent that the industry as a whole is depressed and the consumer demand has fallen off, and the fear has been expressed that any further increase in production costs at this time would further check sales, lessen production and react upon the workers in reduced employment.'

"We will willingly co-operate in the further study of the economic condition of the industry recommended by the report.

"The report recommends an amendment to the code as to the methods of handling questions of work assignment. In view of this recommendation, the Code Authority has directed its committee on code amendment to request a conference with the President or his representatives with respect to the provisions of the suggested amendment, and to make what it is believed the President will regard as constructive suggestions.

"It is our confident expectation that the Government will follow the customary procedure of obtaining the collaboration and assent of the industry or its representatives in the process of code amendment. In regard to voluntary codes, it has been the understanding of the Code Authority that such assent is requisite. In any event, such a course follows directly from the spirit of partnership invoked by the President as the essence of his recovery program, which we are confident the Government is determined to preserve.

"With respect to the recommendation that a Textile Labor Relations Board be appointed, the Code Authority believes the Cotton Textile Industrial Relations (Bruere) Board was as fair and competent as any personnel that could be chosen. As the Government now feels that it can

improve on this machinery by constituting a new Board, it is the desire of the Code Authority to co-operate now as it has in the past in the orderly handling of this matter.

"We are in accord with the generous spirit of the President's recommendation with respect to re-employment of workers who were on strike. The industry will not pursue a policy of resentment in this situation. It is the recommendation of the Code Authority that, as work becomes available, workers who did not engage in lawless violence be re-employed.

"In dealing with the problem of re-employment, however, it should be borne in mind that this question is essentially interwoven with the entire industrial structure of the country, and that the cotton textile business is not now engaged in profitable operation. It is hoped that the interruption of the business of many mills occasioned by the strike will not seriously delay re-employment. It is also hoped that a more general acceptance by the public of the present cost levels and an improvement in business conditions will make it possible for cotton mills generally to increase their activities."

## The Winant Board of Inquiry Report

The Winant committee report, the instrument by which the president requested and secured the ending of the strike, is regarded by all factors as a conscientiously prepared document. The board of inquiry consisted of Governor Winant, Marion Smith, of Atlanta, Ga., and Raymond V. Ingersoll of Brooklyn. The strike committee of the Union, in calling off the strike, heralded the report as a victory, though it made no definite proposals in direct response to the union's original claims (see page 59). A statement from the strike chairman, in calling off the strike, that victory was secured because "our strike has torn apart the whole unjust structure of NRA, lifting a load from all labor as well as from ourselves", was, in the minds of unbiased observers, tantamount to an admission that the strike effort had been partially based on a determination to correct the machinery for the settling of complaints under Section 7A of NIRA. Mr. Gorman also declared, after the submittal of the Winant report, that "we have now gained every substantial thing that we asked in this strike." A comparison of the conclusions in the Winant report with the original demands of the union, to which the strike leaders religiously adhered during the strike, will indicate that either the original demands were just so much window-dressing, or that the strike leaders, in claiming victory, were endeavoring to read into the report more than was intended by its authors.

It was also perfectly clear during the entire trouble that the fundamental purpose of the strike was to force recognition of the U. T. W. as the bargaining agency for textile employees. That this was apparent to the impartial committee is obvious because in the report, the board of inquiry states:

"The fundamental issues involved in the strike boil down to four:

"(1) Recognition of the union and methods of collective bargaining. (2) Machinery for handling complaints of violations of Section 7A and other provisions of the code. (3) Hours and wages. (4) Stretch-out."

The committee's report, too lengthy for complete repetition here, after reviewing the conditions leading up to the strike, took up each of these issues in order. On the first—Recognition of the union and methods of collective bargaining—the Winant board first cited the two points of view:

"The union demands recognition of the United Textile Workers as the bargaining agency of the workers in the textile industry, and the signing of an agreement between the international office of the United Textile Workers and the various divisions of the textile industry covering the labor relationships between both groups . . . Spokesmen for the employers in the industry refuse this demand on two grounds: First, 'We have no reason to believe that this group represents anything more than a minority of the employees of the industry, or that this strike represents their wishes, or that it could be made effective except by intimidation;' second, 'neither the code authority nor the Cotton Textile Institute nor anyone else is authorized by the 1,200 individual mills of this industry to deal for them in their relations with their employees'."

The board then offered its definite recommendation on this point, which, incidentally, was not mentioned by the strike committee in its extravagant claims for "victory". The board stated:

"The board feels that under the circumstances of this situation, an industry-wide collective agreement between the employers as a group and the United Textile Workers is not at this time feasible, and that collective dealing between labor and management in this industry can, for the present at least, best be achieved through development on a plant-to-plant basis."

The board recommended that new machinery be created for collective bargaining in the industry, and recommended the creation of a permanent impartial board of three, "to be known as the Textile Labor Relations Board, which shall have powers and duties in the textile field similar to those conferred upon the National Labor Relations Board and the Steel Labor Relations Board in their respective fields", and to be given full jurisdiction over the administration and enforcement not only of Section 7A but also of all other labor provisions of the textile codes; and to be provided with an adequate staff, including field men and technical assistants, with power to create subordinate boards or bipartisan committees. It was recommended that this board shall have supervision over wool and silk and allied textile industries also.

This new board will of course supersede the present Cotton Textile National Industrial Relations Board and its state subsidiaries. The Winant report reviewed the lack of equipment existing in this (the Bruere board) and the unsatisfactory method through which it had been necessary to handle complaints.

As to the issue of hours and wages, the Winant report cited the previous NRA studies that had been made, but recommended the Department of Labor, through its Bureau of Labor Statistics, prepare a comprehensive report on actual wages and earnings now prevailing; that the Federal Trade Commission undertake an investigation of the economic status of the industry in relation to the problems of hours and wages; and that, as to the maintenance of wage differentials and wage classifications, the Bureau of Labor Statistics should make a study looking to a correct classification of occupations in the textile field, and of actual wage rates for the different classifications.

As to the stretch-out system, after as much study of it as was possible for this committee, the Winant board reached the conclusion that, "owing to the great number of variables, it is not feasible at the present time to evolve any general formula to regulate the numerous types of machines, fabrics and other factors." However, "we do believe that with time and experience such a formula can be developed, and that, meanwhile a temporary and practical method of control can be established."

## Proposed Board for Work Assignments

As a means of providing this "temporary and practical method of control" of the stretch-out, the committee made definite recommendations which will be of especial interest. First, that the new Textile Labor Relations Board shall appoint a Textile Work Assignment Control Board consisting of an impartial chairman, one representative of the employees and one representative of labor. Second, that no employer shall extend the number of looms, frames or other machines tended by an employee during the period ending February 1, 1935, nor make a substantial change in tasks during this time. Third, that during this period, the work assignments board may, on petition of any mill planning to install labor saving machinery, and after hearings open to representatives of interested employers and employees, authorize the employer to increase labor assignments to the extent only that the amount of work required of the employees affected will be directly reduced by the installation of this machinery. Fourth, that this board may in-

vestigate any work assignment which has been increased since July 1, 1933, and if it finds such assignment excessive, may require its reduction accordingly. Fifth, that this board may appoint district impartial chairmen and such other agents as it sees fit to carry out the foregoing provisions.

Sixth, that the Textile Work Assignments Control Board shall study the actual operation of the stretch-out in a number of representative plants, and shall, by January 1, 1935, recommend a permanent plan for regulation of the stretch-out. The Winant board specifically declares that such plan shall include a number of startling principles.

One of the requirements urged by the board is that under such a permanent plan, no employer shall increase the work assignments of any class of work until it has secured the authorization from the district impartial chairman, and that such increases may be authorized only if the following conditions have been complied with:

1. The employer has filed with the district impartial chairman and with the representative of the employees at the mill a petition for authorization of extension of work assignments. The petition must include a sworn statement on a form to be provided by the board, indicating the conditions which have been established at the mill as the basis for extension.

2. A period of six weeks has elapsed since the filing of the petition.

3. Either the representatives of labor in the mill have not filed a protest to the proposed extension before the end of the six weeks' period, or, if such protest has been filed, there has been a public hearing of the representatives both of the mill and of labor, with such investigation by the district impartial chairman or his agents as he may deem desirable, and the impartial chairman is convinced that the conditions which have been maintained throughout the six weeks' period justify the extension.

The second stipulation is that "the district impartial chairman on petition by the representatives of the employees at any mill shall investigate the justifiability of existing labor assignments, and, if he finds the assignment involves excessive efforts by the workers, shall require the mill to reduce such assignment. The fact that any mill has failed to maintain any of the conditions set down in the statement accompanying the petition on which the existing work assignment has authorized shall be grounds for denial of the petition."

The third stipulation is that decisions of the district chairmen shall be binding, but subject to appeal to the textile work assignments control board, whose decision shall be final.

## Brief Chronology of Strike

**Written on September 23rd.**

THE general textile strike was called off at 2:30 o'clock on Saturday, September 22. by Francis J. Gorman, vice-president of the U.T.W. of A., who was chairman of the strike committee. It had been called effective at 11:30 P. M., Saturday, September 1, which, with most mills closed anyhow for Labor Day, Monday, September 3, meant that practically the strike began on Tuesday, September 4. However, many of the mills which had announced intentions to operate on September 3 did so, with others being closed by the strike, either through walk-out of employees, or through intimidation of employees desiring to work by outside strikers, picketers and sympathizers.

At the official end of the strike on September 22, the record showed the loss of 14 lives as a result of the strike, the loss in wages on the part of employees mounting into millions of dollars, wedges driven between management and labor in many plants through outside influences, martial law and its consequences in several of the textile states, disorder, violence and bloodshed unprecedented in the industry's history.

Before this review reaches the readers, there will undoubtedly have been important developments in the post-strike situation. Meanwhile, however, it is felt that a brief chronological record of the developments throughout the duration of the strike itself will be of interest for the purposes of record.

Generally speaking, it is doubtful if the effectiveness of the strike ever reached a strength greater than 65 per cent of the industry's capacity. Detailed figures as to the situation one of the more important textile states may be found in an adjoining column. It is certain, however, that from the peak of the strike's effectiveness, which may be set during its first week, its strength was on the wane, and the figures conclusively show that at the time it was called off, the back-bone of the strike had been effectively broken in practically all of those states in which it had been at all effective.

It is equally a certainty that the dominating factor in such strength as the strike possessed was to be found in the "flying squadrons", which were bands of irresponsible, lawless and ruthless strikers and their sympathizers which, in commandeered trucks, broken down autos, etc., ranged throughout the textile districts to threaten employees in different mills, and by intimidation, ridicule and force, prevent those desiring to work from enjoying their constitutional privilege to do so. Given the romantic and picturesque name of "flying squadrons", these bands of marauders were of varying strength and effect, and it was through them and their intimidation that many mills voluntarily closed or refused to operate and thus subject their loyal employees to the risk of injury and death at the hands of the squadrons. The turn of the tide in the strike, in each state, came as local peace officers and state militiamen were organized to dispel these outsiders and provide protection to the citizens of the state whose desire was to continue their work peacefully.

It is equally a matter of record that throughout the entire duration of the strike, many mills throughout the whole textile belt continued full and steady operation. It is notable that among these were a great number of plants—South and North—at which previous local strikes had occurred, an evidence of recognition on the part of the employees there of the utter futility and tragedy of strikes.

For the record, the formal demands of the United Textile Workers, for which the strike was called, were listed as follows:

(1) Establishment of a 30-hour maximum work week consisting of six hours per day, five days per week, with the same earning power that the workers received under the 40-hour week. Definitions and classifications of occupations must be made and graduated minimum wage scales set up according to skill of the worker. Wages in different sections of the industry must be made more uniform, to stabilize competitive as well as labor conditions.

(2) Establishment of a maximum work load for operations in the various divisions of the textile industry.

(3) Reinstatement of all workers victimized for union membership, in violation of Section 7A of the N.I.R.A.

(4) Recognition of the U.T.W. of A. as the bargaining agency of the workers in the textile industry, and the signing of an agreement between the international office of the U.T.W. of A. and the various divisions of the textile industry governing the labor relationships between both groups.

(5) The establishment of an arbitration tribunal mutually agreeable to both parties to settle all disputes that the parties are unable to adjust themselves. The decision of said arbitration board to be final and binding upon both parties.

Prior to the effective date of the strike, the National Labor Relations Board offered its services as an arbitration board for the "settlement" and prevention of the strike. George A. Sloan, president of The Cotton-Textile Institute, chairman of the Cotton-Textile Code Authority and spokesman for the manufacturers, while meeting with the board as an individual, properly refused arbitration on the

## Statistical Trend of Strike

FIGURES of activity of mills and employment during the period of the textile strike, as applied to one important manufacturing state, indicate clearly the actual situation and the great decline in the effectiveness of the strike as the period progressed.

Authentic figures on the developments, as to the number of mills and spindles in operation, follows:

GEORGIA

| | Closed as Result of Strike | Operating |
|---|---|---|
| Sept. 10 .... | 76 mills—1,944,242 spindles | 56 mills—1,312,736 spindles |
| Sept. 14 .... | 99 mills—2,241,472 spindles | 43 mills—1,057,078 spindles |
| Sept. 17 .... | 67 mills—1,519,542 spindles | 67 mills—1,752,236 spindles |
| Sept. 19 .... | 62 mills—1,375,106 spindles | 85 mills—1,923,444 spindles |
| Sept. 21 .... | 59 mills—1,275,470 spindles* | 88 mills—2,023,080 spindles* |

(*) The figures for September 21 indicate that 61.3 per cent of the spindles reporting were in operation; and 38.7 per cent were closed.

**The discrepancies in the total number of mills shown for each date, and total number of spindles, are due to a varying number of mills reporting their figures. Of the total spindleage in the state—3,395,084—10 mills, with 80,488 spindles, were closed before the strike because of business conditions. There were 48 mills in the state, with more than 1,000,000 spindles, which ran continuously throughout the strike without the loss of a single day's work.**

grounds that the strike was unjustified; that the industry was operating under a government code which could not be changed by force; that the U.T.W. at no time represented more than a small percentage of the workers in the industry; that by far the majority of textile workers were satisfied with their gains under the code and desired to work; that the strike was a strike against the code and not against management. On this declaration the manufacturers stood firm throughout the strike.

On Friday before the strike in the cotton-textile industry, the strike committee ordered workers in woolen and worsted mills to join in the walk-out . . . On Tuesday, September 4, Gorman claimed over 300,000 workers out in cotton mills; Sloan's figures showing less than 100,000 . . . On Wednesday, September 6, President Roosevelt intervened to the extent of appointing a board of inquiry composed of Governor John G. Winant of New Hampshire; Marion Smith, attorney, of Atlanta, Ga.; and Raymond V. Ingersoll, borough president of Brooklyn, N. Y., to inquire into the situation, and offer if called upon to act as a mediation board . . . On September 9, Gorman agreed to arbitration provided all mills in the industry would close during the negotiations . . . Sloan again denied there was anything to arbitrate, but met with the Winant board on the 10th and 11th, with a group of manufacturers, to provide it with information . . . Troops called out in North and South Carolina on September 7 for protection against "flying squadrons" . . . In Rhode Island, a request by the governor for troops prevented by action of legislature . . .

As the strike entered its second week, mills were reopening under local and militia protection in the Carolinas . . . The Winant board continued its investigations . . . On September 14, Governor Talmadge of Georgia declares martial law and orders out militia in full wartime strength . . . A few Georgia mills given protection on that day . . . Friday night, September 14, General Hugh S. Johnson, in New York speech, charges U.T.W. officials with breach of faith in calling strike, his statement hailed as definitely spiking propaganda that the recovery administration was approving strike . . . This week saw the definite breaking of the strike's back-bone in several states . . .

At the opening of the third week, on September 17, Georgia joined the Carolinas in widespread re-opening of plants . . . On Monday, Adjutant General L. W. Camp of Georgia bottled up a "flying squadron" of about 150 at Newnan, Ga., and interned them in a temporary state prison camp at Fort McPherson . . . Others arrested by the militia in other Georgia towns during the week swelled the number of Georgia prisoners to about 200 . . . George Sloan announced on September 18 that 65 per cent of southern cotton mill workers were at work . . . The week's re-openings in Georgia totalled 25 mills, with 16,500 employees, T. M. Forbes announced on September 19 . . . More mills opened on the 20th, and a few more on the 21st . . . Twelve of thirteen mills in Columbus, Ga. (the other having already re-opened under guard) advertised prior to the strike being called off their intention to start in operation on the 24th . . . This situation prevailing in various sections of the country . . . Forbes reported on September 21 that 88 Georgia mills, with 2,023,080 spindles (61.3 per cent of the total) were in operation on that day, including 40 mills, operating 966,002 spindles, which had resumed operations during the week . . . This brought Georgia, in which resumption had lagged due to the lack of troop protection during the first eight days of the strike, up to a level with other southern states . . . On September 21, a few more mills opened throughout the textile area, but this being Friday, many more deferred opening until Monday, September 24, but announced definite intentions of so doing . . .

On Saturday, September 22, following the publication of the Winant board report, and the request from President Roosevelt that "all employees now out on strike will return to work and that all textile manufacturers will take back employees without discrimination", Strike Leader Gorman announced at 2:30 P. M. that the strike was called off . . . The manufacturers naturally had no statement as a group, with the situation now returned to a matter of individual management at each mill.

## Southern Textile Exposition at Greenville Postponed Until April 8 to 13

THE 11th Southern Textile Exposition, scheduled for the week of October 15 in Textile Hall, Greenville, S. C., was postponed until April 8 to 13 as a result of the unsettled conditions in the industry incident to the strike in September. William G. Sirrine, president of Textile Hall Corporation, sponsors of the exposition, announced on September 20 the decision to postpone the show. His original announcement of postponement stated:

"While we anticipate that the strike will be completely over before October 15th, the day on which the exposition was announced to open, we think best to postpone it until April. Owing to the disturbance, textile men have not had their attention on the subject of the exposition and have not made plans for attending. Most of them have been or will be unusually busy incident to the opening of their mills, and therefore the attendance might not be such as we wish to assure to the exhibitors. We believe that not only will the 142 who have signed contracts stay with us but others will contract for space in the April show. All contracts will be carried forward where desired."

On September 22 Mr. Sirrine issued the following further statement:

"The postponement of the 11th Southern Textile Exposition until April has met with unanimous approval on the part of exhibitors and mill executives alike. The definite date of the exposition will be announced within a few days. While it has never been doubted that the textile plants would reopen, there will necessarily be some changes and readjustments in the labor forces of many southern plants. The settling down period will take time, but will have terminated before spring.

"The conviction is strong that the textile industry will enjoy a period of prosperity in the near future, and it will be necessary for a number of the oldest and best known mills to completely renew their equipment. Practically every plant requires something.

"Nothing can contribute more to the buying of new machinery than the belief that for a long time to come this industry will be free of serious labor troubles. The failure of the strike to gain its two main points, viz., increased wages and recognition of the union, has demonstrated that the majority of workers do not support the attempt to force these demands upon the mills. It proves what is more important, that the constitutional right to work, and the right to employ labor of its own selection are based upon principles firmly rooted in the minds of the people.

"No exhibitor at the show has cancelled his contract. All arrangements for booths, railings, installations of electrical, gas, and water connections will be carried out by the management as heretofore ordered, unless otherwise instructed. Reservations for rooms will stand as made. If any who have engaged rooms desire to cancel, notice should be given to Textile Hall Corporation at once. There is a long list of applicants which will absorb any rooms made available.

"The program for the week will be rewritten. It is hoped that the heads of textile schools will meet the first three days. An important meeting of the Southern Textile Association will be held Friday of show week. There has not been time to do more than outline the program. It will include a meeting of the Greenville Section of the A. S. M. E.

"It is thought that some former exhibitors who have not yet taken space will be heard from soon, and it may be necessary to use the balcony and mezzanine of Textile Hall.

"Comparatively few shipments have been made of display materials for the reason that the strike has been causing a great deal of concern at the factories. If shipments are received, they will be stored free of charge or returned if desired.

### Publisher's Notice:

**In view of the postponement of the Eleventh Southern Textile Exposition until next Spring, the special feature of the Southern Textile Exposition Number of COTTON, pertaining to the Exposition, announced for this October issue, will be carried forward to the April issue to coincide with the later date of the Show. Other special treatment and service, however, still apply to the current issue.**

# A Discussion of the Skein Test

By J. L. Delany
Joanna Cotton Mills

SOME very important elementary information is given here, supplemented by some sound practical methods that have evolved from extended experience in the matter of testing yarn for size and breaking strength.

WHEN we say of a yarn that it sized such a hank and broke so many pounds, we are using the yard stick of the cotton spinning industry in referring to the yarn's weight and breaking strength, as determined by the skein-break test method.

This skein-break test, also called the lea test, while not the most accurate method of obtaining an impression of the yarn strength, does have the advantages that it is well known, it can be made very quickly, relatively few tests are needed in order to secure a satisfactory estimate of the yarn strength, and it is possible to accurately obtain the size of the yarn being broken.

The advantages of this method seem to outweigh its disadvantages and because it may be assumed that this method will be with us indefinitely, those who employ it should do so as correctly as possible.

### The Size of Yarn

There are very many in the trade who are familiar with the stated size of a yarn, but they are very often unable to put into words just what it expresses.

Recently the writer asked a group of mill employees what counts of yarn the mill in which they were employed was making. Almost all were able to give the size of both the warp and filling counts. Then they were asked what significance these numbers had, that is whether the number had to do with the diameter of the yarn, its weight, or its length. While a few seemed to have a hazy idea, very few were individually able to give an understandable definition.

To define the meaning of Hank in cotton yarn manufacturing is to state that it is a measurement of length used as a basis for numbering rovings and yarns. The hank contains 840 yards and the number of these 840-yard lengths required to weigh one pound (avoirdupois) is the number of the strand.

When a textile man refers to the cloth he makes as being, for example, 5.00-yard goods, it is understood that this figure refers to the number of yards of this cloth contained in one pound. Similarly the same man might say that he makes 40.00-hank yarn meaning that there are 40 hanks (40, 840-yard lengths) contained in one pound of this yarn.

Factors controlling the size of a yarn are the spinning draft, its moisture regain, and, to a degree, the twist per inch. The greater the twist the higher the contraction, hence the heavier the yarn will be.

### Break

The "break" of a given yarn expresses its tensile strength in pounds as determined by the skein or lea test. There are innumerable factors entering into the strength of a yarn, but a few are, size or hank of the yarn, the staple and grade of cotton used, the twist per inch, roller settings, speeds and mechanical condition of the frame on which it was spun, and the percentage of moisture regain in the yarn at the time of testing.

In most well conducted spinning rooms it is customary to "size" the product of the spinning frames daily. This is done to maintain the even running of the work by checking on the uniformity of the yarn, to avoid excessive or light weight in the strand, and to find the strength and quality of the yarn. Further, your well posted mill man realizes the value in dollars and cents of setting up permanent records for standards of future comparison.

### Misleading Tests

Just haphazardly reeling off 120 yards of yarn, breaking the skein on any yarn breaking machine, weighing the broken skein on a weighing device and then calling the job completed is not by any means doing justice to the yarn under examination. The records of such a series of tests would be more misleading than otherwise. Particularly so if made under natural moisture conditions.

How then should a skein test be made under the conditions prevailing in the average mill at the time of the test, to provide an honest determination of the yarn's weight and strength?

Standard equipment for making this test consists of a yarn reel having a perimeter of one and one-half yards, an automatic power yarn tester of the inclination balance type having a pulling jaw speed of twelve inches per minute, and a yarn scale or balance accurate to 0.25 per cent of the standard size of the yarn. To find the per cent of moisture regain in the yarn a thermostatically controlled oven will also be needed.

### Yarn Tension While Reeling

To reel the 120-yard skein first set the bobbins on the vertical spindles provided on the reel and pass the ends of the strands through the pigtail guides to the spoke fitted for this purpose. The American

Society for Testing Materials states that tension shall be applied by making one full wrap of the yarn around the pigtail yarn guide. On reels using two or more guides, the yarn shall pass straight through the guides onto the reel, the angles of the guides supplying the necessary tension. Judgment must be used in regard to the amount of tension required on yarns having little or a large amount of twist.

The same authority (ASTM) also states that the speed of reeling for filling wound yarns or yarns on cones, where the yarn is drawn from the top, a speed of 100 to 300 r.p.m. of the reel shall be used. For warp wound yarns or yarn on parallel tubes where the yarn is drawn from the side, a speed of 20 to 30 r.p.m. of the reel shall be used.

Under these reeling speeds the filling wound types would be restricted to a minimum reeling time of 16 seconds, and the warp wound types to a minimum reeling time of 2 minutes and 40 seconds. Each speed indicated is for the reeling of the 120-yard skein.

Mr. W. L. Balls in his book, "Studies of Quality in Cotton", states that when the skein has been reeled the two ends may be left free without seriously affecting the result of the test. However, the writer believes that the ends of the skein should be tied securely to avoid even the appearance of an improper test.

Using the one and one-half yard reel will make a skein containing 80 wraps of yarn. Since there will be 80 strands on each side of the mounted skein, there will be 160 strands under tension.

### Breaking the Yarn

Some mill men allow the skeins to stand in a conditioned atmosphere for a definite time before breaking, which is highly desirable. Others break the skeins immediately after reeling and then correct the results to a standard regain.

In either event, when the skein is to be broken, it should be placed on the spools of the testing machine and its strands flattened out and spread evenly in order to have the tension uniformly distributed. Immediately after breaking, the skein should be weighed and its hank and break recorded. The break without the size is of no value whatsoever.

After the skeins have been weighed they should be gathered up and weighed collectively. This should be done as soon as possible after testing to obtain the natural moisture conditions under which the test was made. The skeins should then be placed in an oven at a temperature of 221 to 230 degrees F. and dried to a constant weight. The percentage of moisture regain is figured on the bone dry weight of the yarn rather than the atmospheric weight of the yarn, because the bone dry weight is constant and the atmospheric weight variable.

### The Influence of Moisture

The strength of a yarn is greatly influenced by the amount of moisture it contains. It is fairly well established that within certain limits, for one per cent of moisture regain there is an increase of 6 per cent in the tensile strength of the yarn. Thus it may readily be seen how tests made under weather conditions which vary from day to day, and often from hour to hour, may be inexact and misleading.

The completely equipped and accurately controlled textile testing laboratory at Clemson College contains much equipment of value and necessity for use by the individual mill . .

When the moisture regain is known it is a mere mathematical problem to bring the size and break to a standard moisture. The American Society for Testing Materials under designation D 180-27, Section 10, assumes that the standard moisture regain for cotton yarns is 7 per cent of the dry weight. For correcting the size and break of yarn to 7 per cent regain the following formulas are used.

### Correction Formulas

*For correcting the yarn size to 7%*

$$\frac{\text{Size} \times (100 \text{ plus actual \% regain})}{107} = \text{Size corrected to standard regain.}$$

*For correcting the yarn break to 7%*

$$\frac{\text{Tensile strength machine reading} \times 142}{100 \text{ plus } (6 \times \text{actual \% regain})} = \text{Tensile strength corrected to standard moisture regain.}$$

The use of these formulas under routine testing will be rather tedious and the writer suggests mak-

ing use of Tables 1 and 2 in correcting routine size and break tests. These tables have been based on the above formulas and have been found to be reliable.

### The Skein-Break Constant or Factor

All other things being equal it will generally be found that a heavy yarn will give a higher break than a light yarn. To properly compare the relative strengths of two or more yarns of the approximate count, the break factor, which is the product of the size multiplied by the break, is used. This factor is not constant for any given cotton, but varies inversely with the yarn size.

**TABLE No. 1**

**Size Correction Table**

Seven Per Cent Moisture Regain Correction Factors

| | 3% | 4% | 5% | 6% |
|---|---|---|---|---|
| .0 | .9626 | .9719 | .9813 | .9907 |
| .1 | .9636 | .9729 | .9822 | .9916 |
| .2 | .9645 | .9738 | .9832 | .9925 |
| .3 | .9654 | .9748 | .9841 | .9935 |
| .4 | .9665 | .9757 | .9850 | .9944 |
| .5 | .9673 | .9766 | .9860 | .9953 |
| .6 | .9682 | .9776 | .9869 | .9963 |
| .7 | .9692 | .9785 | .9879 | .9972 |
| .8 | .9701 | .9794 | .9888 | .9981 |
| .9 | .9710 | .9804 | .9897 | .9991 |

Example: To correct a size to 7% from a regain of 5.3% the factor would be found under 5% and opposite .3 (.9841).

**Atmospheric Size × Correction Factor equals Size at 7% Regain.**

pounds at 7 per cent we now find as follows:

$\frac{29.58}{30.00} \times 58.7$ lbs. equals 57.8 lbs, corrected tensile strength

### Variation in Yarn Sizings

The simplest and most popular manner of expressing the size variation in a yarn test is to subtract the lowest number size from the highest number size and divide this difference by the average size. This figure multiplied by 100 expresses the per cent of variation. The average variation in the usual eight-bobbin test of carded single yarn should not exceed 15 per cent. If this figure shows consistently under 10 per cent the yarn may be said to be exceptionally even, as far as a test of this sort can show.

**TABLE No. 2**

**Break Correction Table**

Seven Per Cent Moisture Regain Correction Factors

| | 3% | 4% | 5% | 6% |
|---|---|---|---|---|
| .0 | 1.2034 | 1.1452 | 1.0923 | 1.0441 |
| .1 | 1.1973 | 1.1396 | 1.0873 | 1.0395 |
| .2 | 1.1913 | 1.1342 | 1.0823 | 1.0350 |
| .3 | 1.1853 | 1.1288 | 1.0774 | 1.0305 |
| .4 | 1.1794 | 1.1234 | 1.0725 | 1.0260 |
| .5 | 1.1736 | 1.1181 | 1.0677 | 1.0216 |
| .6 | 1.1678 | 1.1129 | 1.0629 | 1.0172 |
| .7 | 1.1620 | 1.1076 | 1.0581 | 1.0128 |
| .8 | 1.1564 | 1.1025 | 1.0534 | 1.0085 |
| .9 | 1.1507 | 1.0974 | 1.0487 | 1.0042 |

Example: To correct a break to 7% from a regain of 5.3% the break correction factor would be found under 5% and opposite .3% (1.0774).

**Atmospheric Break × Correction Factor equals Break at 7% Regain.**

F. P. Sheldon & Son state, in their chart for determining the approximate strength of carded cotton yarns, that this variation is one per cent of the skein-break factor for each number of yarn above or below number 28s. Thus assuming a skein-break factor of 28s as 1600, the factor for 38s yarn would be 10 per cent lower than 1600 or 1440 using the same cotton. The factor for an 18s yarn, same cotton, would be 10 per cent greater than 1600 or 1760.

As an example of the use of the skein-break factor, a 30s yarn breaking 55 pounds at 5½ per cent regain would have a factor of 1650. This same yarn corrected to 7 per cent standard regain, would then size at 29.58s with a breaking strength of 58.7 pounds giving a factor of 1736. Subtracting 1650 from 1736 obtains a difference of 86 points or practically 5 per cent gain in the strength of the corrected yarn over the uncorrected yarn. The skein-break factor thus offers a quick and certain way in which to compare strengths of similar yarns.

Another way to compare yarn strengths is by using a formula which expresses the strength of the yarn based upon a specified size. The A. S. T. M. gives the following formula:

$$\text{Corrected Tensile Strength} = \text{Actual Average Strength} \times \frac{\text{Actual Average Size}}{\text{Specified Size}}$$

Using the above example of 29.58s breaking 58.7

The variation in the strength of the skeins may range from 20 to 30 per cent for numbers around 30s warp, (carded singles) and proportionately in other numbers. This high per cent of variation in strength is due in part to the variation in diameter of the strand, and as the diameter varies, the twist in the yarn varies with it, hence the break.

The question may arise as to the number of tests that should be made. This is governed by the time allowed in which the test is to be made, by the number of spindles to be tested, and by the general accuracy of the test required. Authorities differ on this. Some say three tests from each of ten bobbins, while others, perhaps more pressed for time, are content with sizing eight or more bobbins daily and depending on the weekly averages of these figures.

### Checking the Yarn Size at the Warpers

Many executives make a habit of finding the average size yarn on each full warper beam made. These figures averaged weekly make an exceedingly good check on the yarn weight in addition to the daily size tests. The number of yards on the beam multiplied by the number of ends and divided by 840 yards will express the number of hanks on the

beam. This figure divided by the weight in pounds of the full beam will give the calculated yarn size of the average yarn on the beam. Where more than one style is made it is a very simple matter to work out the hanks on each style beam. From this it is a short step to set up a table by which the count of yarn on any beam regularly made will be instantly available. See set-up in Table 3.

It must not be expected that the yarn size found in this manner will tally perfectly with the daily yarn sizings. The cotton on the warper beams has been in the spinning room for an indeterminate period, while the sizings have been presumably made from fresh new roving. This seems to be a very good time to point out that in making routine tests one should always use fresh new roving.

All of the foregoing may seem to amount to a tremendous lot of work and effort, but in actual time expended it amounts to little more than the time expended on making a poor test, which is really time thrown away. Anything worth doing, is worth doing well, and that applies strongly to the skein test method of yarn sizing.

### To Set Up Table Number Three

This table is intended to show the count of the yarn on the beams made at the warpers and is found as follows:

$$\frac{\text{Total Ends in Warp} \times \text{Total Yards}}{\text{840 Yards per Hank}} = \text{Total Hanks on Warp.}$$

$$\frac{\text{Total Hanks on Warp (constant)}}{\text{Full Warper Beam Weight in Pounds}} = \text{Average Yarn Count on Full Beam.}$$

| 30,000 Yards 400 Ends | | 30,000 Yards 360 Ends | | 30,000 Yards 350 Ends | |
|---|---|---|---|---|---|
| 14,285.7 Hanks | | 12,857.1 Hanks | | 12,500 Hanks | |
| Pounds Per Beam | Average Yarn Count | Pounds Per Beam | Average Yarn Count | Pounds Per Beam | Average Yarn Count |
| 492 | 29.04 | 443 | 29.02 | 431 | 29.00 |
| 476 | 30.01 | 429 | 29.97 | 417 | 29.98 |
| 461 | 30.99 | 415 | 30.98 | 403 | 31.02 |

Note: It seems unnecessary to show in the above table more than the extreme and average numbers encountered at the warpers in a mill spinning a 30s warp yarn. By using this table as a pattern or by adapting it to suit local conditions, the end in view, namely the determination of the yarn count on the beam, will have been gained.

### Emmons Booklet

Emmons Loom Harness Company, Lawrence, Mass., have prepared and are distributing as No. 18 in a series, a pamphlet discussing "Some Causes of Low Productivity of Textile Workers". The booklet was prepared by the company and its advertising council, The Eddy-Rucker-Nickels Company of Cambridge, Mass., and this particular subject was covered in response to requests from textile readers for a discussion of this subject. The booklet contains an interesting chart which shows that the dollar value of the output of the average textile mill worker per annum is substantially less than the value produced by other factory workers; and that while the output per worker in all United States manufacturing has steadily increased, the output per worker in cotton mills has shown a decrease since 1919. The conclusion given in the booklet as to the major factors in the low productivity per cotton mill worker are interesting. These major causes are stated as follows:

1. The long-term and steady decline in mill margins has reduced the value of the average worker's output; 2. The number of pounds produced per worker has not increased sufficiently to offset even in large part the decline in margin; 3. Other industries have increased physical output per worker at great rates by improvement in processes and equipment; 4. The cotton textile industry on the whole has not been able to create an experimental fund with which to finance research and invention because too great a share of the values it produces is absorbed by its payroll; 5. In consequence, the number of pounds of cotton processed per worker increased only about 15 per cent between 1923 and 1931.

* * *

### Yarn Breaking Strength Test to Meet Normal Mill Requirements

In the September number of Textile Research Dr. Irving J. Saxl, research director, Waypoyset Mfg. Co., Pawtucket, R. I., presents "A Suggested Standardization of Breaking Strength Tests for Rayon Yarns." He holds that for predicting from laboratory tests how a yarn is going to behave during processing, as far as breakage is concerned, the total amount of breakage which must be expected in processing is more important than an occasional weak spot. Instead, therefore, of standardizing on the mean breaking strength as determined by arithmetical averages of single strand breaking tests, he proposes a procedure, based upon the theory of probability distributions, that will show the probable percentage of a given lot of yarn whose breaking strength will be either in accordance with specifications, or inferior to a specified minimum. The procedure is explained in detail.

In the same issue are reports of Textile Foundation studies on The Micellar Arrangement in Various Cellulose Fibres, by D. R. Morey, and The Thermodynamics of Swelling by R. L. Steinberger, also the regular abstract section covering scientific textile research throughout the world.

* * *

### Cotton Bags for Groceries

Significant recognition of the advantages of the growing use of small sized cotton bags for the put-up of various grocery items is to be found in the packaging specifications for the recent purchase of milled rice for the account of the Federal Surplus Relief Corporation. According to C. K. Everett, in charge of the New Uses work of the Cotton-Textile Institute, some 4,000,000 five-pound pockets will be consumed in the distribution of the rice purchased by the Federal Government for relief distribution among the needy and unemployed. The mills furnishing the rice on Government contracts are also permitted to use cotton bags on all two-pound packages. Considerably more than one-half million yards of narrow sheeting will be needed for the manufacture of the cotton rice bags.

Incident to the Federal Government's relief work during the past year, The Federal Surplus Relief Corporation has also purchased considerable quantities of other commodities including citrus fruits put up in cotton bags.

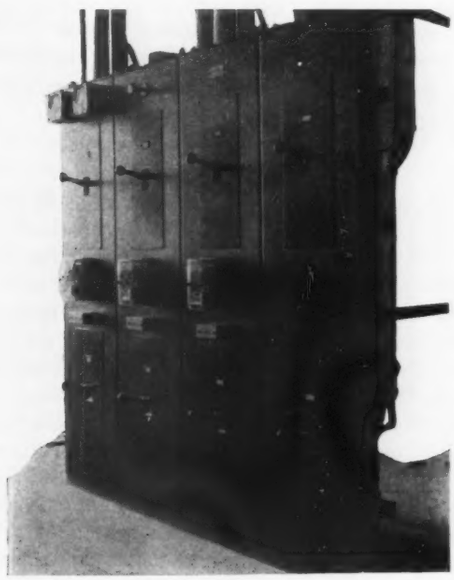
* * *

### Shaftless Motor Bulletin

Louis Allis Co., Milwaukee, have just issued an attractive 8-page bulletin describing the advantages and economies of shaftless motors for driving modern production machinery. The bulletin describes and illustrates the various types of shaftless motors, their construction and electrical characteristics.

# Martha Mills Install the Latest Improvements in POWER FEEDER CONTROL

By A. G. Stanford
Manager, Electrical Engineering Dept.,
Robert & Company, Inc.



The new air-circut breaker type of industrial switchgear at Martha Mills.

SPACE is always a valuable item in any industrial plant, whether in existing buildings or when being provided in new structures, and the space required for the installation of power and lighting feeder control or switchgear equipment is no exception.

In the new Unit B of Martha Mills*, a division of the B. F. Goodrich Company, at Silvertown, Georgia, the latest air-circuit breaker type of industrial switchgear was installed; which, in addition to requiring only a fraction of the space formerly necessary for feeder panel installation, incorporates many new features which add materially to its reliability and to a reduction in maintenance worries and expense.

The accompanying photograph illustrates the simplicity of the new type equipment. Each panel controls two 400-ampere power feeders and the four-panel switchboard could have been installed in a space of 45 square feet had the available floor space been limited. This is compared with the 100 square feet of floor space required for a switchboard of similar capacity but of the well known oil circuit breaker type commonly used in a majority of textile plants.

For this new unit an underground service was run to the new switchboard using lead covered, varnished cambric insulated cables in fiber ducts. These cables terminate at hook stick operated disconnecting switches mounted ahead of the feeder panels which are of sufficient number for serving only the portion of the total contemplated load that was initially installed.

When the construction of Unit B was undertaken it was found that there was a combined surplus capacity in two of the three 6900 volt to 460 volt step-down substations to supply the ultimate power requirements for this unit. Provision was, therefore, made for serving the initial load from one of these substations and the balance will be served from a different substation. Thus has been eliminated the later necessity of either purchasing new power transformers or making expensive changes in the original wiring installation to transfer load from one substation to another.

Since additional load is now being installed the original plan will be carried out with the additional feeder panels mounted to the right of the present switchboard. Bus sectionalizing switches will be mounted between the main busses of the two switchboards. With the cost of these switches as the only additional expense there will be provided the means of serving any portion of the Unit B from either of two substations which will be of considerable value in the event of failure of either of these two transformer banks.

### New Type Breakers Have Many Advantages

As a final means of securing 100 per cent utilization of the three transformer banks there is contemplated the installation of underground tie-circuits between the substations, so that, should any transformer failure occur, a moderate sized block of power could be transferred from either of the remaining stations to serve a predetermined portion of the load in that section of Unit A or Unit B affected by the breakdown.

As previously mentioned the feeder panels in-

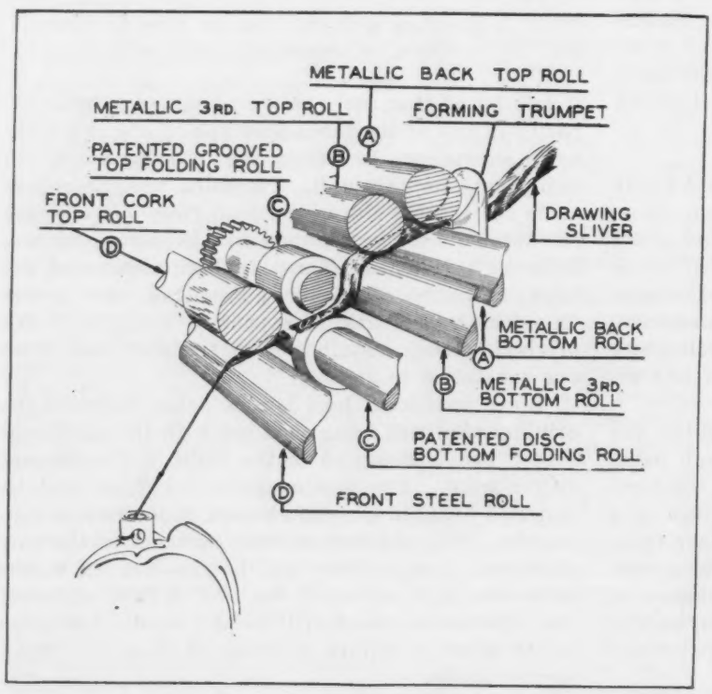
(Continued on page 69.)

*Unit B of Martha Mills is a 40,000-spindle addition to Unit A, which contains 96,000 spindles. A general article describing the design and construction of Unit B—a 3-story mill 345 x 134 feet, erected in 45 working days—appeared in COTTON for July 1934.—Editor.

# New Long Draft Roving System

**Saco-Lowell Shops announce a new drafting process involving folding, with drafts from 10 to 30. Replaces present multiple operations . . . . . .**

THE development of a unique and decidedly original idea of drafting into the perfection of a new system of long draft for roving frames has been announced by the Saco-Lowell Shops. The new drafting mechanism represents a radical departure from conventional ideas of roving machinery, and in the matter of doublings, it is a wide-open break with tradition. The new mechanism, which makes possible the use of only one process of roving, takes the drawing sliver and, in one operation, produces roving for the spinning frame. By means of unprecedented drafts of from 10 to 30 at this process, and a new folding arrangement which offsets the absence of the doublings previously used, the system is designed to replace the existing multiple processes in the roving department.




The principle of the new long draft roving system is clearly shown in this drawing. See text of article for reference to various parts shown by reference letters . . . . . .

The roving department of the cotton mill, involving the familiar repetition of operations, and excessive handling of the stock in process, has needed improvement, to eliminate the piecings which come from multiple operations; the stretching of the roving; the possibility of singles, doublings and faulty splicing. Efforts by the manufacturers of the new system were begun on the premise of reducing these irregularities by reducing the number of times the roving is handled and creeled, even eliminating them by limiting the roving operations to the irreducible minimum of a single process. This of course called for a machine capable of drafts far beyond the limits of the conventional frame. During a number of years of experimenting with many types of drafting equipment, many ideas were tried and discarded as not offering the essential advantages, which include the production of roving equal in every respect to that produced by a conventional system; simple and rugged construction; ease of operation and a minimum of care and cleaning; a substantial reduction in card room costs; adaptability to conventional roving frames; and a range of drafts that would permit production of standard yarn numbers with one-process roving using double roving in the spinning room.

The manufacturers stress the desirability of double roving in the spinning frame, from the standpoint of quality, and its necessity with the elimination of several doublings as under one-process roving. Some of the systems experimented with, they explain, provided up to twice the drafts of regular roving, and the maximum drafts were adequate to handle certain organizations on coarse yarns in a single operation, but none was capable of producing a single-process roving fine enough to permit double creeling in the spinning frames and so economy could be obtained only at the cost of impaired quality, except in the case of very coarse numbers.

The new machine which has now been announced, is the development of an idea originated by W. G. Reynolds, a well known southern mill superintendent. The Saco-Lowell Shops took over his invention, and Mr. Reynolds has for a number of years been a member of their engineering organization in perfecting the application of his idea to roving equipment.

The simplicity of the mechanism is apparent from the accompanying illustrations. Basically, it consists of two sets of drafting elements set in a special roll stand. The back set, *A*, *B*, consists of two lines of top and bottom rolls. The bottom lines are a special type of fluted metallic rolls. The flutes on these rolls are designed to preclude any slippage. The top rolls of this set are also metallic and of a shell type with fluting similar to the bottom rolls. The second set is made up of patented groove and tongue rolls, *C*, and a pair of regular roving rolls, *D* (fluted bottom and cushion-covered top roll.)

The important features of this system are that all drafting is performed on an untwisted sliver, and

a folding operation is obtained which tends to give the same results as a doubling.

The ordinary round trumpet on the traverse motion of the frame is replaced with a "forming" trumpet which tends to condense the stock into a ribbon of uniform density and cross-section, permitting it to be gripped by the back rolls uniformly across its entire width. This combination of a uniform flat sliver and the specially fluted back rolls gives an accurate control of the fibers as the drafting is begun, and permits an initial draft in the back set equal to that of the total draft of an ordinary frame.

The back line of rolls in the front set, *C*, incorporates the most essential feature of the frame. A groove is cut around the top member of this pair of rolls, and a corresponding tongue is formed on the bottom roll. These two rolls act as the back rolls of the second drafting element, in addition to performing the folding operation on the sliver as it is received from the preceding set of rolls.

It will be noted that this front set of rolls is on a level lower than the first set. This arrangement allows the sliver to be laid into the groove gradually by the tongued roll, as the sliver comes downward from the first set and the selvages are thus gently folded down and into the main body of the cotton.

From the folding rolls the sliver receives its second draft, and the roving is wound onto the bobbin in the usual manner.

Due to the fact that the original selvages of the sliver have, in the folding process, been turned under and placed in the middle of the web, practically no fibers are thrown off, it is explained, making a much easier frame to clean.

The drafting range on the second set of rolls is well in excess of the total draft of an ordinary frame.

On 1-inch cotton, the proven range of total drafts for the machine is 10 to 30, and with better than 1-inch staple, considerably higher drafts are entirely practical, it is stated. For the great majority of yarns, the drafting capacity of this system is such that only one process of roving will be necessary, and under the most exacting conditions, only two processes will be required, the manufacturers point out.

It is obvious that the mechanism is simple, and requires little attention; less, the manufacturers point out, than a regular slubber. The only nonmetallic part is the cork or leather covered front top roll, and this is of the conventional type.

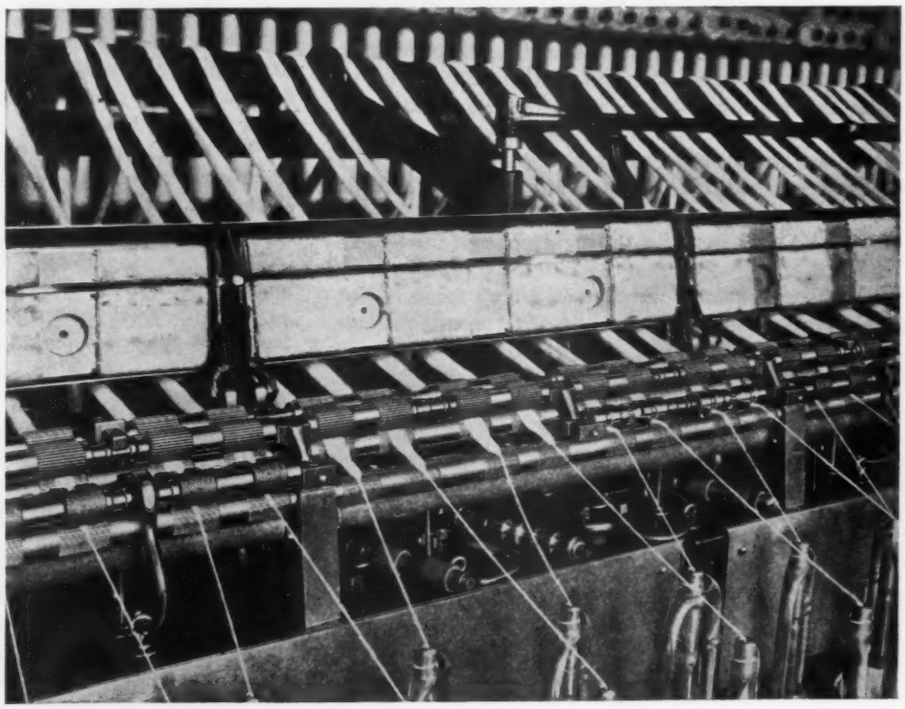
The brushing or wiping action of the folding rolls removes a considerable amount of small leaf and seed particles in the drawing sliver, thus producing a decidedly cleaner appearing roving.

Because of the high total draft, the surface speed of the back rolls is only about 1/4 to 1/6 of the speed normally used on a regular slubber. This very slow speed at which the drafting is begun permits the fibers to be drawn gently and slowly from the sliver.

By eliminating unnecessary handling of the sliver from process to process, the use of twist is entirely dispensed with, right up to the point where the roving leaves the front rolls.

The sliver supply to each spindle is 14 to 15 pounds, piecings due to creeling are largely eliminated. The bobbin of an 9x4 frame carries 15 ounces of cotton, for example, so that one creeling—12 to 14 pounds of sliver per can—gives 13 to 15 doffs.

The new drafting equipment is applicable to existing machines. The size of roving frames now in use and the weight of hank roving desired for the spinning frame are the factors determining which machine, whether slubber, intermediate, etc., would be utilized in the conversion to the new principle.



This view of the new long draft roving on a frame shows the system with various parts removed. The grooved rolls may be seen in the third section of rolls from the left . .

# An Accurate Method of Measuring Variations in Picker Laps

By R. A. Butler,
Technical Superintendent, Martha Mills,
The B. F. Goodrich Company

HERE is a clear description of a really new idea which is being successfully and constantly used by several southern mills in measuring picker lap variation and thus arriving at a remedy for uneven roving and yarn. Further details will be gladly furnished upon request . . . . . .

THE production of yarn with a minimum amount of variation from bobbin to bobbin, skein to skein, yard to yard, and inch to inch is essential to maximum strength and high quality of any textile product.

The earlier in processing that maximum uniformity is accomplished the greater is the extent of the improvement, as a reduction can be safely made in the amount of fiber manipulation. This refers in particular to improving the uniformity of picker laps, card and drawing sliver.

Too little attention has in the past been paid to the uniformity of the product of the picker. The total lap weights are carefully regulated and in many mills maintained within a variation of 1 per cent each way. Yard-to-yard weighings are also quite frequently made, and occasionally the laps are checked for stretch. Very few mills, however, know how much variation there is within a yard of lap as shown by the variation in 100 yards of card sliver.

The benefit derived from maintaining uniform total lap weights is obviously greatly reduced if there is a yard-to-yard variation of from 5 to 10 per cent, a foot-to-foot variation of from 15 to 25 per cent and a difference in the stretch from laps doffed from different pickers of as much as four yards.

There are, then, four defects which must be controlled in a picker lap. These briefly are as follows:

1. Variation in total weight of lap.
2. Variation from yard to yard.
3. Variation from foot to foot.
4. Stretch in the lap.

The first is dependent upon the set-up of the picker, as well as the evenness and uniformity of the feed. The second is affected by the type and efficiency of the evener motion, the third by the distribution of the cotton on the picker screens, and the fourth by the condition of the rack frictions.

A constant check and control over these four defects has been a difficult problem largely because of the lack of proper equipment.

Possibly the most accurate method of determining the quality of the work turned out by the picker is to convert it into card sliver and weigh a hundred or more yards. There exist the inaccuracies of the carding process, such as defective or bare spots on the doffer clothing, a varying percentage of waste, and a loss of sliver when cutting into one-yard lengths.

A view of the lap measuring machine. Electric lights underneath lap permit inspection through slot in hood. Feed rolls deliver accurately cut specimens into tray . . . . . .

However, since the ultimate aim is to obtain even card sliver the yard-to-yard weighings at this process are a very good indication of the quality of the work done on the picker.

The objection to this method is the time consumed to measure, cut and weigh one hundred yards of sliver.

The problem then is to develop a quick, accurate method of measuring, cutting and weighing various lengths of lap.

The photograph accompanying this article illustrates the type of machine developed by the Bibb Mfg. Company for weighing, measuring and examining picker laps.

At the back of the machine which is at the right in the photograph may be seen a cradle and a roll on which the lap rests, similar to the method employed on a card.

Directly in front of the cradle is a bonnet or hood, and two sets of feed rolls, and a tray at the front to catch the specimens to be weighed.

The machine is operated by placing a lap in the cradle, threading the end under the hood and through the feed rolls. Under the hood is a glass section

over which the sheet of lap passes. Beneath this glass section are four lights, so that as the sheet passes over this section the operator can carefully observe the evenness of the lap through the slot shown in the hood.

The two sets of feed rolls are so geared that the front set revolves continuously, while the back set, through the means of a gap gear, can be made to stop at any complete revolution, and since the particular feed rolls illustrated are exactly six inches in circumference, lap lengths in any multiple of six inches up to one yard in length can be accurately measured and cut off. Because of the close setting of the two sets of rolls, a surprisingly clean cut-off is obtained. The measured and cut specimens then slide into the tray and are picked up by the operator for weighing.

The whole machine is motor-driven and through a series of gears the speed is reduced so the lap will be delivered into the tray at exactly the correct frequency for weighing. A change gear is provided in the gear train, so that the speed of delivery can be increased or decreased depending upon the length of the lap being tested.

At the end of the hood and just in back of the large springs which exert pressure on the feed rolls may be seen a counter. This is connected to the back feed roll and registers the number of revolutions for the entire lap, and since each revolution is exactly six inches, the total length can be computed to within six inches. If more accurate results are desired they can be obtained by carefully noting what portion of a revolution the roll has made when the lap runs out.

It is evident that a machine of this type is something that has long been needed by the textile industry for the purpose of checking the results of the picker operation. Uniform yarn must be started in the picker room, and uniformity determines largely the strength of yarn from any given cotton.

### Results Obtained by Checking Picker Laps

When this machine was first put into operation and laps checked from all of our pickers, a variation of approximately 15 per cent was obtained when averaging ten 12-inch specimens and the maximum variation from fifty 12-inch specimens was from 25 to 30 per cent. After overhauling the pickers and reducing the lost motion in gears and carefully overhauling and adjusting the evener motions and fan speeds the variation was reduced to approximately 10 per cent for ten 12-inch specimens and 15 per cent maximum variation on fifty 12-inch specimens.

One important item brought out in this study which is frequently neglected is the matter of distributing the cotton on the screens. This defect shows up very clearly on 12-inch lengths, although it would affect to a smaller extent the variation figure when taken on one-yard lengths. Thus it can be seen that it is very necessary to check picker laps carefully if this process is to produce the best possible results. One lap from each picker should be checked each week and more frequently if there is any reason to suspect uneven results.

## Martha Mills Power Feeder Control

(Continued from page 65.)

stalled in the new unit at Martha Mills provide for controlling two feeders from each panel, however, standard panels are manufactured to provide for one, two or three feeders each. The best arrangement for any particular installation being dependent on the size of the feeder conductors, the manner in which they leave the switchboard, and the number of instruments desired.

As now produced by the leading electrical manufacturers the panels are made from ⅛-inch rolled steel plate and bolted together and with the air circuit breakers mounted on the rear. All copper bus work and jumpers are self-contained and the complete switchgear equipment is shipped with several panels completely assembled and wired-up. This materially reduces the installation cost.

The fire hazard is considerably less than that of oil circuit breakers. Also no disconnecting switches are necessary ahead of each breaker for safety during inspection and maintenance, since all working parts of the new type air circuit breakers are accessible from the front of the panels, in fact the entire breaker can be so removed. The breakers operate with direct quick-make and quick-break action thus insuring long life for the contacts and the elimination of all bell cranks and operating rods. The trip elements are made interchangeable so that trip units only need be purchased should elements of larger capacity be required in the future.

As shown in the illustration the feeder conduits can be run to a point near the breaker terminal studs, however, a later improvement in the design of the panels provides a six-inch top plate and wiring gutter in each side with cable clamp installed therein. The feeder conduits are terminated with locknuts and bushing in the top plate and the conductors run in the gutters to the breaker studs. This further simplifies and reduces the cost of the wiring installation.

The total installed cost of the complete switchgear equipment of the air circuit breaker type compares very favorably with that of the oil circuit breaker equipment and in the majority of textile mill installations the cost of the new type equipment will be less. The determining cost factor usually depends on the number of feeders per panel and the number of feeders for which ammeters, or other meters requiring current transformers, are desired.

The Westinghouse Electric and Manufacturing Company furnished the complete switchgear equipment for Unit B at Martha Mills while J. M. Clayton Company, Atlanta, Georgia, handled the electrical installation. Engineering plans and specifications were prepared by Robert and Co., Inc., Atlanta, Ga.

# MPEA--A Co-operative Means of Promoting Efficient Drives

*Many textile men have become acquainted with the Mechanical Power Engineering Associates—MPEA for short—and as the constructive work of this organization increases along well-defined and logical lines, they will be hearing more of it and from it. MPEA is "devoted to the development and distribution of facts concerning the economic use of power in industry", and back of that worthy and worthwhile slogan is a story unique in industrial activity and selling.*

*Because textile mills are among the country's major users of power, because this industry has benefited by and has contributed materially toward the progress of this new organization, the story of its beginning, development, purposes and plans, is told informally here.*

For many long years, the companies supplying belts, pulleys, hangers and all of the other elements in group drive for power transmission sold their products singly, with little co-ordination between them or their representatives. Progress and improvement were of course made in these individual products, but little if any concerted activity was utilized in the selling of these complementary services as a unit, no organized effort in promoting the ultimate purpose—group drive—of which each of these products was a part.

Thus, when the individual electric motor drive came into the power transmission picture, and, through planned and ordered exploitation, became competitively a factor, the mechanical power transmission industry found itself a collection of separated, unorganized units, each with its salesmen proficient and competent as to its particular phase of the whole, but with no means of selling, first to those individual salesmen and through them to industry, the "product" of which each was a part—efficient group or mechanical transmission. The electric drive, on the other hand, was—and is—usually sold by an engineer who furnished, from power source to machine, the transmission equipment—motor, switch, control, etc.—complete as a unit.

## How It Began

Facts being the stubborn things that they are, it was not surprising that within the last 40 years—a short lapse compared to the life of power transmission—electric motor sales have taken an increasingly large proportion of the power transmission business, with mechanical methods suffering a correspondingly increasing decline.

Such was the disconcerting picture, as applied to mechanical power transmission, when the heads of two of the industry's component parts—a pulley manufacturer, and a leather belt manufacturer—sat down to face the facts of What, Why, When, and How?

Each of these two concerns had, through gradually increasing research work and in recognition of the need for facts, produced information convincing enough that mechanical power transmission, as typified by their products, had a definite place in industry. The weakness appeared to be that to the prospective customer, these findings bore a commercial flavor and resembled more "sales talk".

The idea of concerted action to sell power transmission on an engineering basis, instead of by the detached and unrelated methods of the past, took definite form in that conference, which occurred in 1932. These pioneers, carrying their thought to others in the mechanical power transmission industry, found their contemporaries—and competitors—receptive, and a substantial fund was raised to engage an engineer to carry on their work of going into industry for them, without the responsibility of having to sell any one product, and secure the facts. That was the beginning of Mechanical Power Engineering Associates, composed now as originally of belting, shafting, pulley, hanger, and bearing manufacturers and the like, but now broadened out to proportions of an amazing extent, supervising nearly 60 clubs, located from coast to coast, with a few in Canada, comprising more than 3,000 men interested in selling economical power transmission.

## How It Grew

The tremendous growth of the idea undoubtedly owes much to two basic policies which have governed the organization from its beginning. First, there must be no propaganda, nothing but facts; second, it must be a co-operative activity; the facts must be presented in such a way that no one individual concern or group of companies could use them to their own advantage and to the disadvantage of others.

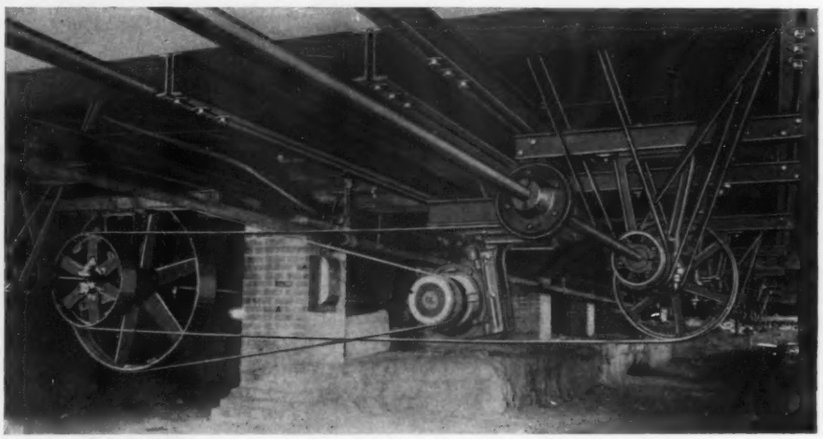
The first step being to get the facts, the organization engaged the services of a research engineer, selecting Victor A. Hanson, a trained electrical engineer. This man went into cotton mills, silk mills, foundries, paint factories, and other industries, to secure the facts about power transmission. His findings more than confirmed the findings of some of the individual members as to the essentiality of group drive in industry, as to the improper application of mechanical transmission in the past through lack of co-ordinated application, and as to the possibilities of a new product—modern group drive—for replacement of antiquated and poorly engineered installations, and as a service for new applications.

These case studies—and those which have followed as well—provided the Associates with the desired ammunition. But, by and large, their salesmen, proficient in their own lines, lacked the proper understanding of the whole picture. They—the manufacturers' and dealers' salesmen—must be taught to sell power transmission service, instead of just

pulleys, or belts, or bearings as such. There must be some means created for placing the facts in the hands of everyone interested in power transmission.

It was thus that the idea of local power transmission clubs, which are the contact point of the textile man with this new idea in selling, was conceived. The headquarters of the organization sent two representatives throughout the country, organizing these local clubs, to feed *into* and *from* this new plan of securing and distributing facts on power transmission. As indicated, within two years the number of clubs has increased to approximately 60, located in the major power consuming sections of the country. In the Southeast there are now active clubs in Atlanta, Greenville, Charlotte and Knoxville, which are meeting regularly once a month or more frequently. Other clubs are being organized.

A further word as to the research and application work of the organization, before discussing the activities of the local club. As the largest single industry in the South, the cotton-textile industry offered a promising field for investigation. Case studies were made in several plants, this work including not only tests and observations of existing conditions and the possibilities of theoretical changes in the power transmission set-up, but actual application of modern group drive in several instances. An outstanding example is the thorough examination of weave room drives. It was found that the old group drive, with each of its elements sold and perhaps applied separately, mind you, was invariably designed to fit the building rather than the machines, with no consideration given, in placing the hangers, to pulley locations; thus requiring an unnecessarily large shaft. Bearings, usually of the ring or collar oiling type, were poorly maintained. Belting was poorly selected, with little attention to maintenance in operation. Shafts were naturally out of alignment. And so on.



Modern group drive for the weave room—an installation made under supervision of MPEA, incorporating support at point of load, anti-friction bearings, light shaft, steel stringers, etc. . . . . .

To determine what efficiencies could be obtained with group drive properly designed, a modern group drive installation was made in a Georgia cotton mill, with hangers suspended from caps in steel stringers, to give support at the point of load; with anti-friction bearings; with lighter shaft made possible by the proper support and bearings; with 2-inch belts well dressed and operating at a light tension, and properly maintained. The drive was placed underneath the floor, eliminating seconds from flying dirt or oil drip; and counteracting the belt tension by the weight of the shaft and pulleys, reducing the bearing pressure and increasing the drive efficiency.*

The results shown by this installation are an example of the factual material being supplied by MPEA to those interested in power transmission.

Let us look in on a typical power transmission club. It is a group of 20, maybe 50, or in a larger center 100 men, meeting to learn more about how to sell power transmission on a strictly engineering basis. The first, natural and altogether wholesome effect of these groups was to dissipate a feeling of reserve, suspicion and distrust among competitors. Then comes the benefit of viewing the sales problem in terms of modern power transmission, and not as an opportunity of selling belts, hangers, pulleys or what-have-you. There is no formal procedure in these meetings. They may take up one of Hanson's case studies this month, or shoot questions at one of their own officers to whom a subject has been assigned, or take up some part of the red book for study. The red book is "a practical analysis of some fundamentals of industrial power transmission", and gives facts concerning the economical use of power in an elementary, graphic manner. Occasionally, a man from headquarters is a visitor, bringing up-to-the-minute ideas on recent activities. And—believe it or not—in some of the clubs an individual member has actually brought in the details of a prospective job, and asked his fellow-members to assist him in working out the most suitable drive application; yes, even letting his competitors in on it!

Another recent development in the association's program is the conducting of intensified training schools, in various industrial centers, to supplement the work of the power clubs, by giving concentrated instruction and demonstration to those interested in the subject. These activities have all been supplemented by an extensive advertising program which is designed to carry the story of MPEA and its purposes to all managing and operating executives.

Of particular interest to southern textile mills is the fact that in recognition of the importance of this industry, MPEA has created a special service by engaging R. E. Walker, Jr., an experienced textile engineer, who is devoting his full time to a study of textile power transmission and operating problems.

*A detailed description of this application was presented in an article "The Value of Modernized Group Drive in the Weave Room", by Victor A. Hanson, on page 26 of COTTON for July 1933.

# Applying Anti-Friction Bearings as Replacement on Calenders

By H. H. Iler,
Mechanical Supt., Union Bleachery

USE of anti-friction bearings has become standard practice with machinery manufacturers in the design of textile calenders, and application of them to older machines originally designed for plain bearings, is more or less common where conditions of original design permit. Therefore there is little of special interest from an engineering viewpoint, about such applications of orthodox bearing equipment.

For this reason, the accompanying photographs showing roller bearings applied to top and bottom rolls of textile calenders may at first glance exhibit no details which appear to depart from the usual. However, the matter of replacing the original plain bearings in this group of machines (eight in number) turned out to be a problem of major proportions which one machinery manufacturer, and two anti-friction bearing manufacturers, advised was impossible of satisfactory solution because of certain features of frame and roll design apparently preventing application of standard bearing equipment.

It was only after a thorough and painstaking study of the matter, by a third bearing manufacturer's engineer and the author, that successful application of roller bearings appeared to be practicable, and the first machine was equipped and run under test of actual every-day operation for a period of six months before the original conclusions were considered as proven decisively enough to proceed with the work of equipping the other seven. The first machine to be equipped has now been in every-day operation for more than a year, and nothing has developed to indicate faulty engineering, unsuitability of equipment, or misfitting. The entire group of eight machines is now equipped (with the exception of one where frames have to be relocated), and they have been operating quite satisfactorily for varying periods.

### The Difficulties Encountered

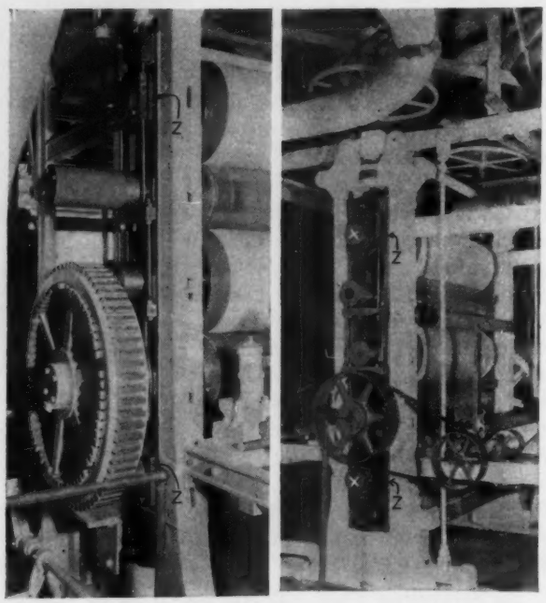
In the consideration of applying roller bearings to these calenders, several apparently insurmountable difficulties were recognized:

(1) Bearing openings in the frames of several machines were far too narrow to permit the use of bearing boxes of cast iron suitably proportioned for the accommodation of roller bearing assemblies of a size known to be suitable for the loads and speeds to be imposed.

(2) The journals of many of the rolls in use could not be safely reduced in diameter to receive the roller bearings selected in accordance with the imposed loads and speeds, because of the method used for locking the husk filling material in place when the rolls were made.

(3) The calenders being built at different times, and by two different manufacturers, their widths between cheeks of frames varied from machine to machine, thus making it appear to be necessary to fit up each set of rolls for the particular machine in which they would be used, and therefore making it necessary also to carry spare rolls in stock for each individual machine.

*Difficulty* (1). This was submitted to a manufacturer of anti-friction bearing housings, who in turn consulted specialists in an eastern engineering institute, and our suggestion that cast steel might be found to be satisfactory was met with their counter suggestion that a casting of iron, so alloyed as to have characteristics of semi-steel, would serve the requirements of our problem quite satisfactorily. This latter suggestion was followed in view of the lower cost, ease of machining, and quicker availability, in comparison with casting of steel.

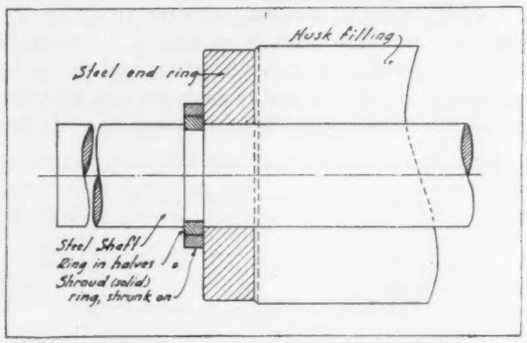



Two sides of a calender which was equipped with anti-friction bearings as described in this article. Z indicates the roller bearings; and X the location of the thrust bearings . . . . . .

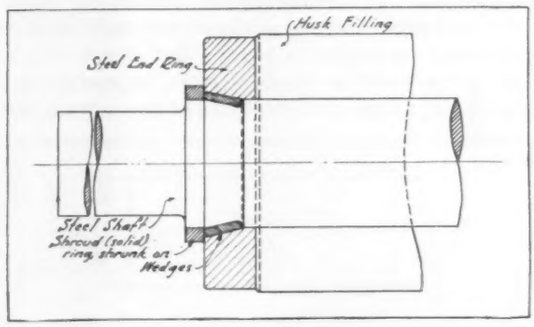
*Difficulty* (2). In order that the reader may have clear understanding of this, he is referred to Drawing *D* which shows the construction details of one end of a husk calender roll. It will be seen at once that the journal could not be reduced in diameter to much extent before the pressure under which the husk filling

material is held would be released and the roll ruined. Drawing *E* shows a different type of locking which is now generally used by all roll manufacturers, the type of locking shown in Drawing *D* being considered obsolete by them even though some cheaper to use.

In the particular matter in question there were found to be quite a number of rolls having the locking as shown by Drawing *D*. Obviously the journals of these rolls could not be reduced in diameter enough to permit application of suitably proportioned bearing assemblies without destruction of the rolls, unless some plan could be devised that would make unnecessary the removal of that part of the journal stock which was in shear strain behind the split locking ring to make its position permanent in resistance to the locked-up pressure of the filling material. On the rolls having English type of locking, all stock in this relation could be removed without injury to the roll, as will be seen by referring to Drawing *E*, as the tapered wedge seats change the direction of stress thus making it one of compression resisted by the shaft mass, the shrunk-on shroud ring serving to prevent the wedges being squeezed out of place.



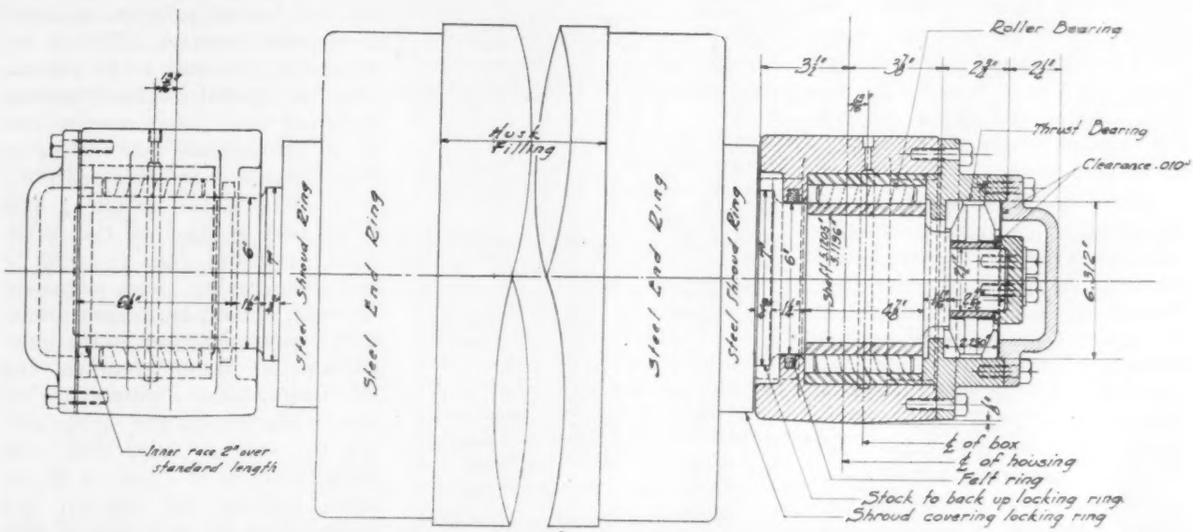

Drawing D—American Locking




Drawing E—English Locking

The necessity of leaving some journal stock in backing-up relation to split locking rings on rolls having the American type of locking, brought to light another difficulty, viz., there was not room between cheeks of frames to permit this necessary lengthening of the roll between shoulders (between shroud rings, end to end of roll). Considering that all anti-friction bearing manufacturers recommend and follow the practice of mounting calender bearings on the vertical center line of machine frames, unless another plan could be devised, our installation was an engineering impossibility. Considerable study of all the factors involved in this particular detail developed the thought that although departure from the manufacturers' recommendations and practice might not in all cases be desirable and safe, there seemed to be no good, sound reason why the boxes in this particular case should not be offset to sufficient extent that the backing-up stock could be left on the journals. This plan was submitted to the roller bearing manufacturer's engineering staff and received their approval. See Drawing *A* and note that C/L of box is offset 13/16-inch from C/L of frame housing, this amount being the calculated width of journal stock necessary to back up the split locking ring on the American locked rolls.

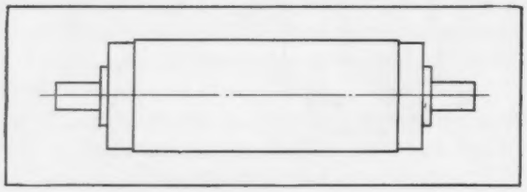
*Difficulty* (3). A study of the question of standardizing roll lengths so that all husk rolls would be interchangeable machine to machine, and so that the number of spares necessary to carry in stock against




Drawing A—Showing how the roller bearings were applied to the calender rolls as described in this article

operation emergency needs could be minimized, revealed that it was only necessary to select as standard the narrowest width machine, offsetting the bearings in all machines as noted in explanation of solution of Difficulty 2, and providing inner races 2-inch longer than standard on the free end of each roller bearing equipped husk roll, to secure the feature of roll length standardization, inasmuch as the widest machine, except one, was within this limit.

Drawing *B* shows a husk calender roll as made for use in calenders equipped with plain bearings (see Drawing *F*). Such bearings are usually of brass or bronze and their working surfaces are made with very small areas in order to assure that wear will take place in the bearing which is more inexpensively replaced, rather than on the surface of the journal which



Drawing B

Drawing C

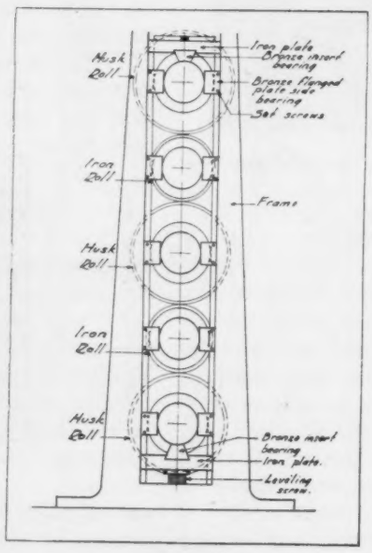
is expensive to repair or replace. Such reduction of bearing areas on top and bottom rolls whose journals have to take the tremendous pressures required in calender finishing of fabrics, results in the generation of high temperatures which, transmitted through the shaft to the inside of roll, chars and destroys the husk filling material rather rapidly and requires replacement of such charred rolls to secure the smooth surfaces necessary for satisfactory finishing operations.

This same condition of insufficient bearing areas makes lubrication a matter of annoyance, messiness, and excessive expense. Replacement of the top and bottom roll plain bearings with roller bearings, even though the latter cost far more, is probably justified by the elimination of internal heat damage to husk roll fillings when it is considered that it costs over $400.00 to refill a roll, and a new one costs in excess of $500.00, to say nothing of the ease and economy of lubrication of roller bearings and elimination of mess on the machine frames and floors unavoidably present where plain bearings are in use.

Reference to Drawing *A* will also acquaint the reader with the scheme worked out to provide self alignment of rolls in the machines. Tops of top bearings where the set mechanism bears on them, and the bottoms of the bottom bearings where they rest on the pedestals in frames, are slightly rounded. In fitting the bearing boxes into frames of machines, slight allowance was made to provide the necessary movement crosswise to permit rolls to self align themselves under any condition of operation that might tend to misalign them. Notice also that a groove is milled around the inside of housing where outer bearing race seats. This race having two holes diametrically opposite each other and in line with housing groove, provides two points where lubricant forced in at the hole in housing casting may reach the roller assembly. The housing casting is fitted with an Alemite fitting for the application of roller bearing grease as recommended by the roller bearing manufacturer, by means of a hand compression gun.

A comparison of Drawing *C* with Drawing *B* will show what machine work is necessary for fitting roll journals to receive the roller bearings and thrust bearings, which are on one end of each top and bottom roll to maintain proper position in the machines. (It should be stated here that opposite ends of these rolls have no thrust bearings but are free to move lengthwise in response to the effect of heat generated in operation of calender finishing).

The thrust bearing used consists of two hardened and ground steel plates with a *bronze plate-steel roller* assembly between them, the whole being mounted on roll shaft and operating in bearing box with .010-inch clearances as shown on Drawing *A*. Usual practice is to thread the end of shaft and hold the thrust bearing in position with a nut and locknut, but the device shown on Drawing A and designed by the author, is in several respects superior and more cheaply fabricated. The three cap screws shown are drilled through their heads and wired together after final tightening, to assure permanent adjustment of clearances.




Drawing F

The photographs show that only top and bottom rolls are equipped with roller bearings. This is because the pressures to be encountered in operation affect bearing design at these points most severely, all intermediate rolls resting on their neighbors on their operating body surfaces, and requiring only to be held in stack or tier alignment vertically (see Drawing F and photographs). Such alignment is easily secured by flanged bronze plate bearings secured to the inner surfaces of frame openings, and the longitudinal alignment is effected and maintained by providing the bearing plates with sufficient thickness of flange to fill the space between roll shoulder and frame cheek on each side of each journal and on inside of frames.

The photographs of calenders herewith and Drawing *F*, show clearly the "side" bearings of intermediate rolls.

The incentive for consideration of equipping these old calenders with roller bearings lay in the impossibility to operate the machines at speeds known by experience to be possible, because of excessively heating bearings; frequent bearing replacement; too frequent destruction of roll fillings by heat transmitted through shafts from journals to inside of fillings; cost and annoyance of lubrication; messiness of frames and floors resulting in soilage of fabrics in process; excessive consumption of power; short life of driving belts; difficulty in starting and stopping machines. As yet no data is available to show savings in these particulars, but observation indicates that many of them are entirely eliminated and others are perceptibly improved. We find that our operators are much pleased with the improved machine performance, and their own enhanced ability to process greater productions with improved quality.

The success of this installation must be in large measure credited to Messrs. Naughton and Grady of The Hyatt Roller Bearing Co.; G. & N. Machine Co.; and H. W. Butterworth & Sons Co.—all of whom gave valuable assistance in the engineering study of the problems, as well as in supplying fitments in accordance therewith. To the personnel of our own organization I must give praise for the prompt execution of the fine machine work requisite for proper fitting of the bearings and housings, and for their ability to understand and carry out accurately intricate instructions. Without all of these things our calender department could not function in the efficient manner we find it now does, and we find ourselves assured that our investment, which at first seemed economically unwise, has turned out to be a sound and profitable one.

## Hosiery Manufacture Shows Seasonal Drop

June production of hosiery in the United States amounted to 8,256,654 dozen pairs, or 17 per cent below that of the previous month, according to the regular monthly statistical bulletin of the Hosiery Code Authority. Shipments for the month were 8,334,881 dozen pairs or 12 per cent below May shipments. These declines are partially attributable to seasonal trends, according to Earl Constantine, executive director of the Code Authority, there being a normal valley in the demand curve during the latter part of June, through July, and well into August.

A 12 per cent decline in demand during June is not considered unsatisfactory, Mr. Constantine continued, when seasonal trends are considered. On the other hand a 17 per cent reduction in production indicates a recognition on the part of manufacturers that demand for July and August was not expected to be much, if any greater than it was in June.

Further, Mr. Constantine stated, production during the month was practically the same as shipments, resulting in stocks on hand at the end of the month being practically unchanged from those at the end of the previous month. These stocks on hand at the end of June amounted to 18,164,435 dozen pairs. There has been a gradual building up of stocks on hand over the past few months, as is a normal tendency in view of the anticipated peak demand for fall.

A 17 per cent curtailment in production during June points to a recognition on the part of the manufacturers that inventories had been building up as was indicated in the statistics for May, and a movement on their part to prevent these inventories from becoming too great.

Stocks of seamless hosiery of all types were lower on June 30 than they were on May 31, dropping from 13,452,551 dozen pairs to 13,333,899. Reductions in stocks in this group were shown particularly in women's seamless silk and seamless cotton hose, and in men's seamless rayon and seamless silk socks. Other reductions occurred in misses' ribbed goods, infants' socks, men's golf hose and in anklets.

Full-fashioned hosiery stocks, on the other hand, showed a slight increase to 4,830,536 dozen pairs on June 30 as compared with 4,686,773 on May 31. Other increases were recorded in women's seamless rayon and seamless wool hosiery, men's cotton socks and wool socks, children's 5/8 and 7/8 flat goods, infants' ribbed goods, boys' golf hose, and in bundle goods. Many of these are types which will come into more active demand with the anticipated fall peak.

Total production for all types in June was 8,256,654 dozen pairs as compared with 9,991,562 dozen pairs in May. Full-fashioned production declined from 2,747,342 dozen pairs in May to 2,474,267 dozen pairs in June. Seamless goods declined from 7,244,220 to 5,782,387 dozen pairs in June, a drop of 20.2 per cent.

Shipments of all types amounted to 8,334,881 dozen pairs in June as compared with 9,487,060 in May. Shipments of full-fashioned hose declined from 2,734,524 dozen pairs in May to 2,381,052 dozen pairs in June, while shipments of seamless goods dropped from 6,752,536 to 5,953,829 dozen pairs during the month.

## Clemson Notes

The Clemson Textile School began its 1934-1935 session with approximately a 33 per cent increase in its enrollment over that of last year, according to Dean H. H. Willis; this was by far the largest enrollment since the textile school was organized in 1898. The textile school in its three departments —textile engineering, chemistry and dyeing, and weaving and designing, now has 267 students. Among this number are three graduates and ten upper classmen who have transferred from nine different colleges in the two Carolinas and Georgia.

Dean Willis states that this increased enrollment is due mainly to two reasons: (1) Greater demand for and interest in technically trained men on the part of the textile industry and (2) the success of the Clemson Textile School in placing its graduates in the industry during the past seven years. During this seven-year period the demand for Clemson textile men has exceeded the number of graduates available, it is stated.

* * *

## Dupont Rayon Fabrics

Goona Alpaca, a smart new fall fabric with a thin wool appearance, made of Du Pont rayon by the Shirley Silk Company, was featured in a recent window display at the Du Pont Exhibit on the Boardwalk in Atlantic City. Two dresses of the fabric, fashioned on tailored lines, one in green and the other in red, and both from Franklin Simon & Company, New York, were shown on figures. Accessories completing the ensembles, consisting of shoes, bags, gloves and hats, were also shown from the same house.

# CURRENT TEXTILE TOPICS. . . .

## Talk of the Month.

IT USED to be stated as a truism that "experience counts", but not so today. For experience has previously had to deal with a normal ebb and flow, with a gradual variation of the long-term trend that constituted evolution. The cycles brought return of sound practices from depression. Even if new elements crept in on which experience was lost, that was not destructive because the fundamentals continued to change so gradually that the new could be absorbed without demoralizing the whole. In seeking to achieve wholesale reform, the brain trusters and the Administration have created abnormal conditions on all sides. They have tried to change conditions overnight for orderly production, orderly marketing and what not, only to obstruct orderly evolution.

### Industry Struggles through a Morass of Abnormal Conditions

One of the outcomes of this situation in the political-economic program was the disruptive textile strike. It has been cited broadly as a strike not of the workers against the industry, but as of the leaders of the United Textile Workers to gain absolute domination of the labor in this vast industrial field. The very strike itself soon demonstrated the seriousness allowing of one small group to dictate the operations of so many hundreds of thousands, if that were done. Yet the leaders of the U. T. W. undoubtedly were prompted by the provisions of the NRA, which had at least a broad implication that the large unions were to be supported in their efforts to gain widespread control of labor.

For various reasons mill men naturally preferred to deal with employees represented by their own men in local units or groups of factories. Above all they were justified in withstanding the U. T. W. when it was found that a large proportion of the workers themselves were unfavorable to that union. As in its manufacturing schedules, the cotton textile industry had shown itself amenable to evolutionary ideas acceptable to the Administration in the matter of arbitration for labor disputes in individual cases. In this as in other relations, however, the industry has been distressed by the possibilities of rash departure in principles through the pushing of reform to the disregard of recovery.

Figures of cotton consumption for August were well above those for July, by reason of the return to the code schedule in the final week. Obviously the September total will show a heavy reduction, because of the strike, but the statistical situation is improved proportionally and the natural consequence has been a general strengthening of values. The consumption figures over the past year tell the story of the national program and its vicissitudes. By August last year, the manufacturer of cotton was beginning to react from the record rate of the rush begun in May, in response to the note of confidence sounded by President Roosevelt and in the attempt to forestall the burden of the processing taxes.

During the last four months of 1933, the industry was on a sharply declining rate. For five months in 1934 it ran on a substantial basis again, but the failure of other economic affairs to make a real beginning of recovery and thereby to create normal adjustments of private business, together with the renewed lack of confidence in government programs, brought low activity again in the cotton industry. The next stimulus came from heavy government buying which, although reflecting a continuation of large Federal expenditures for relief because the recovery was stalling, nevertheless was business for the mills. This itself and some pick-up in regular business helped to give a better price tone to the market.

It will be noted that, instead of a more even progress of business under the codes, the experience so far has been short spurts and declines. It might be countered, however, that this condition in textiles is the result of failure in important lines such as private construction to get under way. It has appeared that many of the key industries for some time have been in a position of waiting, all primed to go ahead in a sustained movement but holding back because of misgivings over the Administration policy.

What is needed most is the normal inflation that comes through credit expansion because of expanding private business. The President indicated his interest in this direction when he said that the bank examiners were exercising too rigid restrictions upon loans. It is clear that the Administration must before long find a way out of relief business, which threatens ultimate undermining of the country's solvency. Living costs are rising because of higher prices for raw materials. The only way to take care of this situation and the costs of government with its excessive spending program is to create some spur to private business whereby the public can secure more purchasing power as well as funds to pay taxes.

### New England Mill Situation

MILLS of this district did not have any chance in the September weeks of the strike to accept normal business, and so to test the progress out of the dreary decline culminating in the summer curtailment. There was a large total of government business secured during August and this was sufficient to stem the previous weakness of prices for goods. A much better tone to the market was noted in Fall River, the center of printcloth manufacture for New England, before the end of August. Up to that time, however, the quotation of prices was largely nominal and mill men in some cases stated that goods were below a level equalling the cost of production.

# MILL-PROVED

GOODYEAR TEXTILE BELTING
"DELIVERS THE GOODS"
AT LOWER COST

DEVELOPED BY
PRACTICAL EXPERIENCE
IN COTTON INDUSTRY

IT is easy to understand why Goodyear products for textile mill service last longer and cut costs.

Every inch of their construction embodies practical mill experience! They have been proved in actual mill operation!

Goodyear, itself a great user of cotton, knows by long experience the peculiar requirements of the industry — the fast, hard drives; the humid atmospheres; the necessity for uniform power to maintain even tensions on delicate threads.

With this intimate "inside" knowledge, Goodyear has naturally been able to build better designed equipment that serves you longer and more economically —

—exclusive Goodyear products like Goodyear Emerald Cord V-Belts, Goodyear COMPASS (Cord) Endless Belt, Goodyear THOR Belt, (Seamless) and Goodyear Air Hose for clean-up work.

SPECIFIED TO JOB BY GTM

Most important of all, these Goodyear products are individually specified to your particular operating conditions by the G. T. M.—Goodyear Technical Man. His wide experience in effecting mill economies is at your service; just write Goodyear, Akron, Ohio, or Los Angeles, California—or your nearest Goodyear Mechanical Rubber Goods Distributor.

Goodyear is represented in the South by authorized Goodyear Mechanical Rubber Goods Distributors, conveniently located with relation to your mills and able to supply promptly all Goodyear Mechanical Rubber Goods for the textile industry

THE GREATEST NAME IN RUBBER

NRA CODE

GOODYEAR

TEXTILE BELTING

MADE BY THE MAKERS OF GOODYEAR TIRES

Under the influence both of government orders and the strike the situation last month became gradually firmer. The character of government orders and willingness of trade buyers at first to speculate only in staple lines gave these the initial impetus toward profitable levels. However, all kinds of goods received the inevitable strengthening influence of a non-productive period and a time of increasing distribution. Fine and fancy goods began to indicate a pinch of supplies for distributors before two weeks of strike conditions had elapsed, since curtailment of output had been very rigid in such cloths. The submission to the FSRC of bids for added yardage of sheetings, in the middle of September, was at prices materially above those on government business a month earlier.

From a purely management standpoint, the strike was awaited in New England with a feeling that a final showdown on the whole matter of union control would be timely. The rights of local groups and indeed of the majority of workers to deal with employers outside the dictation of a minority were at stake. The high-handed tactics of the U. T. W. in coercing mills without their jurisdiction into closing down was roundly denounced by newspapers generally. But the community angle to the situation was deplorable, because the ramifications of such a situation are so broad. Thus at Fall River it was early indicated that the financial standing of the community, just recently beginning to find relief from the long depression and wreckage of cotton manufacture, was endangered again.

On the ostensible U. T. W. issue of the "stretch out", which Mr. Sloan laid low, Russell T. Fisher, secretary of the National Association of Cotton Manufacturers, also made pertinent comment, as follows: "The concrete demands of the U. T. W. boil down to an insistence that all stretch-out (so-called) be eliminated. No stretch-out has been put into effect in the North since the code has been in operation, even though permissible. Stretch-out is an unfortunate word, as it suggests an increased work-load on the operative. This is not the case as, when properly applied, it lightens the work-load and usually increases the wage. A better word would be specialization.

"Stretch-out amounts to a redistribution of work by which a machine operative is asked to do only the work at which he is a specialist. The amount of work done is not dependent on the number of machines he operates, but on the frequency that the machines require attention. In mills where specialization has been carefully planned by management, no complaints have been registered. There is much talk of lightening the work-load and no employer contends that where work burdens are so heavy as to cause hardship they should not be lightened. As a matter of fact, in the cotton textile industry there is a real desire on the part of many employees to have the work-load increased, provided there is an accompanying increase in compensation. Most of the complaints that have been received from labor have been that the code prevented them from working longer hours and getting more pay."

Looking ahead, it is recognized here that the cotton and allied industries can prosper only through increased purchasing power of the country through widespread employment in private business. In this connection, the cotton industry is hampered in doing its share by factors which militate against consumption. The labor and operating conditions themselves, pending improvement in other lines, have been of such character because they were adjusted on expectation of a trend toward general recovery. Then there is the processing tax which continues to hang as a millstone on the neck of the industry.

As pointed out in this district, the processing tax alone stands as a cost which might be a dividend in some concerns and until something is done for stockholders the prosperity of the country will not be on a well-rounded basis. Bearing out the claims of burden from this tax, the figures of the Bureau of Internal Revenue in Boston are illuminating. The processing tax on cotton, it is reported, furnished the biggest single item in the collection of $23,686,827 from AAA taxes in Massachusetts for 13 months to July 31. The one item amounted to $19,196,160. "If it transpires that the drought and other influences have burned up this tax," said the Fall River *News Herald* late in August, "the good that so frequently can be discovered in evil will have been demonstrated."

## COMMENT ON THE COTTON MARKET

**New Orleans, September 15, 1934.**

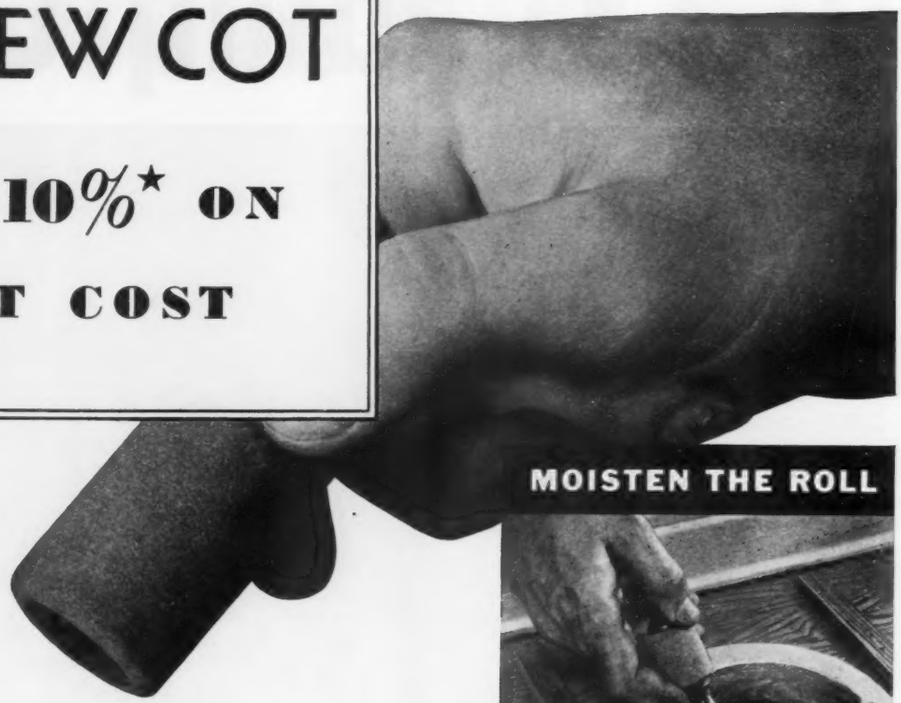
THE trend of the cotton market was downward during the past month, due to numerous depressing developments. During the period the drouth was effectually broken, there were threats of a nation-wide textile strike, less apprehension as to possible further inflation, a slight increase, instead of an expected further decrease in the American crop, larger foreign crop ideas prevailed, and there was uneasiness as regards European financial and political conditions.

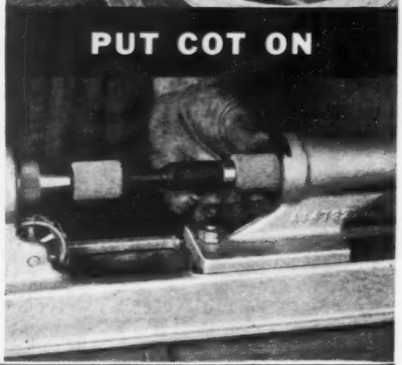
The labor troubles in the textile industry resulted in a walkout and closing of many mills, restricted buying and shipping of raw cotton in the South, and influenced more hedging in the contract market than would probably have developed had the strike not taken place. However, there were factors that tended to hold hedging in check to some extent, such as the Bankhead Act regulations delaying the movement to market, as ginnings, due largely to premature opening in much of the central and western belts, were heavy, and especially the government's loan plan of 12 cents to the producer, based on ⅞, Low Middling and above. Because of the 12 cents loan proposition, values appear to be virtually stabilized around the 13 cents level for middling at present, with the probability of not declining much further unless the strike is prolonged or unless the interior offers more freely. If the strike is prolonged, values may seek a lower level, at least temporarily, but if it is settled soon, the market is apt to make a quick recovery.

The longer the mill shutdowns continue, stocks of goods in jobbers' hands will likely continue to decrease, which would probably make for a strong situation, so far as the goods market is concerned, eventually, and there would likely be an urgent demand for the finished product when the mills resume operations. Meanwhile more raw cotton is apt to pass into the hands of the government, as result of the loan plan, which ultimately, may be of very large proportions. Under the circumstances, and because of the small crop and so much cotton being subject to damage in grade in consequence of so much rain of late in nearly

# THIS NEW COT

## SAVES 10%* ON FIRST COST






***You can cover the same number of rolls in 1/5 the time because there's cement already in these cots***

FOUR-FIFTHS of your roll-covering labor is now done at the Armstrong factory—and it doesn't cost you a cent! With the new Armstrong's Seamless Cork Cots, there are but two simple operations in covering rolls. Dip the roll in water, slip the cot over it—and you're done! And the cot-to-roll bond is tighter than ever, because there's glue the full length of the cot.

There is no difference in thickness, quality, efficiency, operating economy—or *price* in these new cots. They cost us a little more to make. They cost you a lot less to apply—actually reduce your first cost at least 10%.

Send for full information concerning the new ready-cemented cork cots. Address Armstrong Cork & Insulation Co., Textile Div., 923 Arch St., Lancaster, Penna.

★ **DIRECT LABOR AND MATERIAL COST**
COVERING SOLID SPINNING ROLLS
Per M Rolls (2,000 cots, 1⅜" x 1 3/16" O. D. x 13/16" Hole)

| | Former Method | Armstrong's Glued Cots |
|---|---|---|
| Cots, 2,000 @ $40.00 per M | $80.00 | $80.00 |
| Glue (240 rolls per pt.) per M Rolls @ $.32 pt. | 1.33 | |
| Total Direct Material Cost | $81.33 | $80.00 |
| Direct Labor Assembling 2000 cots 40 Rolls per hr. @ $.40 per hr. | $10.00 | |
| 200 Rolls per hr. @ $.40 per hr. | | $2.00 |
| Total Direct Material and Labor Per M Rolls Ready for Buffing | $91.33 | $82.00 |

# *Armstrong's Seamless Cork Cots*

FOR SPINNING AND CARD ROOM ROLLS

# 100 Leading Cotton

• *Part of the 15,000 feet of Highflex Jr. Belting at a large New England mill. After a thorough test of Highflex Jr., every drive in the mill was equipped with this brand of belt.*

• *Highflex Jr. endless belts on Saco-Pettee Card. After 8 months of constant use, with the added punishment of crossed drives, these belts are in such perfect condition that it is almost impossible to find where they were spliced.*

Goodrich

# Mills Prove that Belt Pre-Conditioning Pays

MORE than 100 leading cotton mills are regularly re-ordering Goodrich pre-conditioned rubber-and-cotton belting. In many of them the original Goodrich belts have lasted 7 and even 8 years. The accounting records of these mills show that this belting:

1—increases production by reducing slippage
2—costs less than leather in the first place, and
3—lasts so long, with so little attention, that true cost is far less than any other belt.

Under normal conditions belts containing cotton, when exposed to the moisture of the spinning room, can do nothing but shrink and build up destructive tension. But not Goodrich Highflex Jr. This cotton-and-rubber belt is specially designed for textile mill service, and is then pre-conditioned by your own men in the very atmosphere of the room in which it is to work. This literally means that you have a belt made-to-order for each drive. The result is that Pre-Conditioned Highflex Jr.—

1—maintains uniform tension
2—delivers higher and uniform speed
3—operates with far less vibration
4—requires little or no attention
5—seldom if ever has to be removed for take-up.

Highflex Jr. offers you these definite production advantages at *less original cost.* Here is your opportunity for a positive and immediate increase in net profit. Let your Goodrich Distributor prove it. The B. F. Goodrich Company, Mechanical Rubber Goods Division, Akron, Ohio.

• *Goodrich Belts installed on Saco-Pettee spinning frame in 1928 and still in excellent condition after almost 6 years of constant use.*

**GOODRICH MECHANICAL RUBBER GOODS FOR THE TEXTILE INDUSTRY INCLUDE:**

- *Transmission Belting*
- *Multiple-V Belts*
- *Conveyor Belting*
- *Air, Water, Suction, Steam and Fire Hose*
- *Roll Coverings*
- *Packing . . . and*
- *A Complete Line of Miscellaneous Rubber Items*

ALL *products problems* IN RUBBER

*Highflex Jr. Belting*

all sections of the belt, the basis is likely to continue high, and offerings comparatively light. These features will probably assert their influence on the market in the near or distant future, perhaps in a more striking manner than at present.

**GOVERNMENT CROP REPORT**

| | This season | Last season |
|---|---|---|
| Acreage for harvest, September 1st | 27,241,000 | 29,978,000, final |
| Average condition of crop, September 1st | 53.8 | 74.2 |
| Indicated average yield per acre, September 1st | 162.6 | 206.5 final |
| Indicated production, bales, September 1st | 9,252,000 | 13,047,000, final |

In Liverpool the stock of American cotton now is reported to be only 269,000 bales, and owing to the very limited importing, is expected to decrease further, which accounts for the scarcity of contracts and the late relative firmness of near positions in that market, which appears to be a sustaining influence.

**WORLD'S INDICATED SUPPLY OF LINT COTTON, INCLUDING WORLD'S CARRY-OVER, AUGUST 1**

| Bales— | This season | Last season |
|---|---|---|
| American, about | 20,000,000 | 24,000,000 |
| Foreign, about | 18,000,000 | 17,000,000 |
| Total, about | 38,000,000 | 41,000,000 |

**CENSUS REPORT FOR AUGUST**

| | This season | Last season |
|---|---|---|
| Consumption of lint in Cotton Growing States, August | 336,159 | 464,705 |
| In New England States, August | 72,579 | 105,435 |
| In All Other States, August | 12,211 | 18,762 |
| In United States, August | 420,949 | 588,902 |
| Mill stocks, August 31st | 1,081,218 | 1,155,556 |
| In public storage and warehouses, August 31st | 5,824,025 | 5,799,467 |
| In mills, public storage and warehouses, August 31st | 6,905,243 | 6,955,023 |
| Active spindles during August | 24,153,998 | 25,926,374 |
| Active spindles during July | 24,417,682 | 26,085,300 |

**BRITISH BOARD OF TRADE REPORT FOR AUGUST**

| | This year | Last year |
|---|---|---|
| Exports of yarn, pounds | 10,000,000 | 11,000,000 |
| Exports of cloth, yards | 169,000,000 | 149,000,000 |

An anticipated domestic consumption of raw cotton during August, the first month of the new season, was much less than for the corresponding month last season, and the closing of so many American mills thus far this month, due to the strike, will likely make for unfavorable comparatives for September compared with September of last season when domestic consumption of lint was about 500,000 bales. However, after the strike is settled, more spindles will probably be put into operation, and American mills will probably become more active, in which case domestic consumption would increase again, perhaps rapidly.

While there will likely be a decrease in the world's consumption of American this season, as compared with last season, perhaps by 1,000,000 to 1,500,000 bales, prospects are for a much larger decrease in the American crop this year, but there are indications for a larger foreign crop this year, yet the outlook is for a good increase in the world's consumption of foreign growths this season. Final results may show no appreciable change in the world's carry-over of foreign cotton next summer, whereas there is every prospect that the world's carry-over of American at the close of July, 1935, will show a material reduction as compared this year's 10,598,000 bales. Therein lies the prospective stronger statistical position of American.

**TOTAL AVERAGE RAINFALL IN TEXAS, IN INCHES**

| Year— | 1934 | 1933 | 1932 | 1931 | Normal |
|---|---|---|---|---|---|
| August | 1.28 | 2.95 | 3.39 | 2.04 | 2.44 |
| Nov. 1 to August 31st | 21.06 | 23.52 | 29.77 | 24.81 | 25.31 |

As to the future progress of the American crop, some benefit is expected to come of the rains in the recent drouth areas of the central and western belts, but the extent of such improvement is likely to depend a great deal on the date of the first killing frost this fall and the extent of such possible damage. In the eastern belt, from Alabama eastward, a fairly good crop is in prospect, but that section has had much rain again of late, which is favorable for activity of boll weevils.

Notwithstanding the labor troubles, trade conditions in this country are holding up pretty well, and are likely to expand if the strike is settled soon, as better prices for farm products prevail than at this time last year, especially for grain and cotton, and the better prices for commodities should lead to better business in foreign countries also, as many of them benefit by the higher prices, especially if there be improvement in the European political and financial situation.

As to Japan, unprecedented mill activity is reported there, and that country is expected to be a good buyer of new cotton crop in the United States this season.

## WHAT THE SOUTHERN MILLS ARE DOING

CLOVERDALE Mills, Montgomery, Ala., which were leased by Hesslein & Company, of New York City, have been placed in operation. The mills have been idle since 1929.

Social Circle Cotton Mills, Social Circle, Ga., have installed a new R. D. Cole boiler and Detroit stoker.

Clark Thread Co., Clarkdale, Ga., recently completed a community building, 60 x 100 feet, containing auditorium, kitchen annex, etc.

Asheville Cotton Mills, Asheville, N. C., have been making considerable improvements in the mill village and changes in the mill.

Cannon Mills Co., Plant No. 5, Concord, N. C., are installing new Saco-Lowell spinning machinery, replacing old equipment.

Mortimer Mills, Inc., Gastonia, N. C., have been granted a charter with an authorized capital of $100,000. The incorporators include F. C. Todd, Kenneth Todd, and P. P. Pearson.

Contract was let to Bryant Electric Co., of High Point, N. C., for the electrical work in the new unit being erected by the Proximity Mfg. Co., Greensboro, N. C.

The Wabena Twine Mill, Lexington, N. C., was recently acquired by Cayuga Linen and Cotton Mills of Auburn, N. Y., and is expected to be put in operation shortly.

James Cotton Mills, Maiden, N. C., was recently purchased by D. B. Johnson and R. J. Woods, and will be operated as the Grace Cotton Mill.

D. E. Converse Mills, Glendale, S. C., have installed two Curtis & Marble shearing machines.

Hartsville Cotton Mills, Hartsville, S. C., have installed a Barber-Colman automatic spooler and super-speed warper.

Regal Silk Hosiery Mills, Petersburg, Va., have been incorporated with an authorized capital of $50,000. The incorporators are Arthur K. Deal, John E. Green and Edward D. Lucas.

O. V. B. Knitting Mills, Inc., Spring City, Tenn., have been granted a charter with an authorized capital of $25,000. The incorporators are Joseph A. Slizer, Harry T. Burn, and Otto V. Burn.

Bales Hosiery Corp., High Point, N. C., has been organized with an authorized capital of $100,000 by M. L. Bales, of Thomasville, N. W. Bales, George J. Johnson, and N. C. English.

Bogle-Watkins, Inc., have let contract to Angle-Blackford Co., Greensboro, N. C., for the erection of a hosiery mill. The main building will be three-story, 60 x 160 feet, with 40 x 40 foot dyehouse and 30 x 30 boiler room.

Ruth Hosiery Mills have been incorporated by J. C. Berry, Robert L. Berry, and W. J. Berry, representing a reorganization of the firm formerly operating under this name.

THE Credit Checking and Banking Services of TEXTILE BANKING COMPANY, provide assurance against credit losses—equivalent to selling for cash without credit risk, while at the same time granting customers the usual time and terms on their purchases.

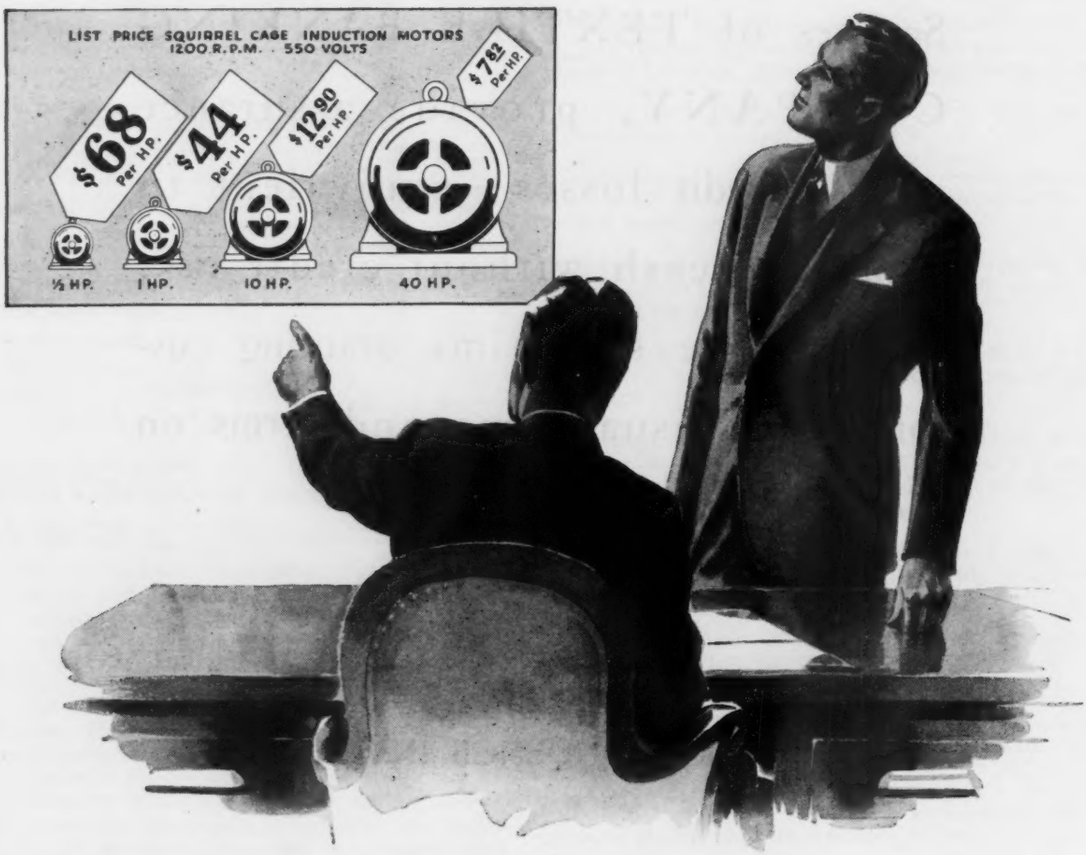
CORRESPONDENCE INVITED

TEXTILE BANKING COMPANY

59 MADISON AVENUE, NEW YORK

WITHIN THIS SPREAD-BETWEEN THE POWER AND THE

# "YOUNG MAN, YOU'VE PUT YOUR FINGER ON A COST-REDUCTION I NEVER THOUGHT OF"




"WE shall have to sell over seven million yards of additional production to make up for *just the carrying charges* on the difference in cost between these two methods of transmitting power to our machines." Thus a textile head summed-up the problem.

In a metal-working plant, additional production to the value of 7 per cent of the entire machine investment had to be sold to offset *carrying charges alone* on the difference in cost between the Unit and Group methods of applying motor power to the work.

In nearly every plant throughout industry there are machines and departments that call for Unit Drive (individual motors) and there are machines and departments that demand Group Drive (one motor for a group of machines). Either method of getting the motor power to the work is right when, and only when, it is correctly applied. Both methods are rarely right for the same set of conditions.

On the right choice rests a production cost factor that cannot be ignored. A study of the production requirements of the plant or the department is usually necessary for a sound recommendation. This is the work of power or transmission engineers.

But any executive can quickly see the cost-

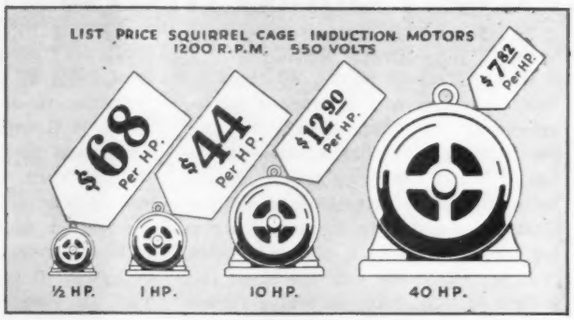
## WORK—IS A SOURCE OF PROFIT IN MANY PLANTS . . .

penalty involved in using Unit Drive instead of Group Drive where the latter is equally or more efficient. Essentially, the question is one of a correct use and application of motor power (see graphs at right).

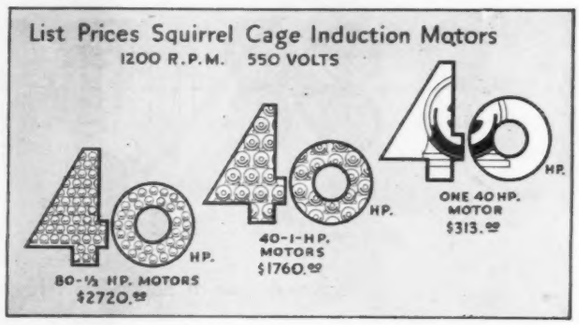
Unit Drive with small high-cost motors meets certain conditions within or throughout a plant. But there are many conditions under which modern Group Drive, using larger and more heavily loaded motors, will not only substantially reduce the investment cost per installed horsepower but reduce maintenance and power costs as well.

An answer to the question of how to reduce costs is usually found through correction or modernization of power and transmission equipment. You may approach the question by making this inquiry: "Is there a source of profit in *our* plant between the power and the work?" or you might very profitably send for and read our Red Book which is "A practical analysis of some fundamentals of Industrial Power Transmission." Write for it today.

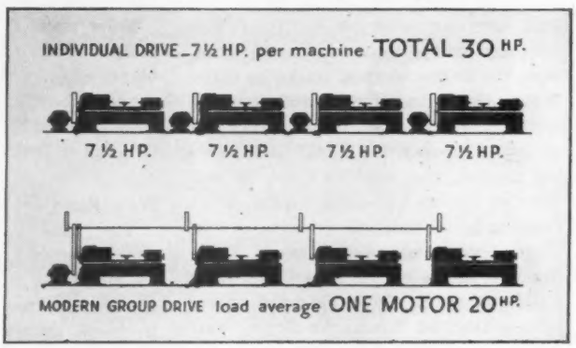
***For example, consider the price of horsepower.***




***Then consider how the use of small motors affects your total horsepower investment.***




***Now see how much horsepower you actually need for a 20-horsepower job.***




Case studies have been made in a number of plants showing detailed costs of group drives, or combinations of group and unit drives, compared with the cost of a unit drive on each machine. These case studies, available on request, report the actual findings of power transmission engineers working with the manufacturers' own plant officials, engineers and accountants.

**POWER TRANSMISSION COUNCIL**
*(Sponsored by Mechanical Power Engineering Associates)*
*An association of producers and distributors of power, power units and mechanical equipment for the transmission of power.*
370 LEXINGTON AVENUE, NEW YORK

•

*Power Transmission Clubs have been organized in key industrial cities to render constructive service to customers. Their number is growing. Members are qualified to render constructive service as a result of study of supplied case information as well as local plant problems.*

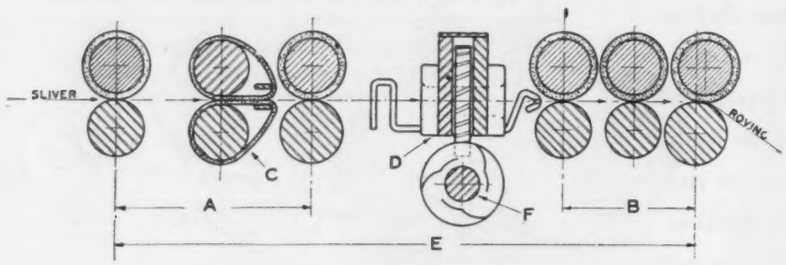
## A POWER DOLLAR SAVED IS A PROFIT DOLLAR EARNED

# NEW TEXTILE EQUIPMENT AND PUBLICATIONS . . .

## Whitin "Super-Draft" Roving

Whitin Machine Works, Whitinsville, Mass., have recently announced the development of "Super-Draft" roving, representing a further advance in the use of longer drafts on roving frames, using the basic principles of Whitin-Casablancas, already operating on roving for a quarter of a million spindles, it is stated. (The application of this system of long draft on roving frames was fully described in the July 1933 and 1934 issues of COTTON.)

The new Super-Draft system has been developed as a mechanism to permit the operation of roving frames with extremely long drafts, and is designed especially for use in connection with yarn counts of 30s and finer. The company states that on coarser numbers, the drafts secured with the usual Whitin-Casablancas roving long draft system are adequate. Super-Draft can be applied to 8x4, 8x3½ and 7x3½ roving frames, and enables them to produce as fine as 6.00-hank roving direct from cans of finished drawing sliver. Examples of the possibilities in drafting are indicated in reports showing 4.10-hank made from 60-grain sliver with a draft of 29.5 on the Super-Draft for tire cord; and 4.25-hank made from 60-grain sliver on the Super-Draft for print cloth, with a draft of 30.6.




Sectional view of Super-Draft roving

The principle of Super-Draft roving is shown in the accompanying sketch. The sliver passes through System A, which is a Whitin-Casablancas slubber C operating at slow speed. This system gives a draft of from 7 to 10. The twister heads D operated by worm shaft F take the wide ribbon of cotton coming from the front rolls of System A and by inserting false twist transform it into a round roving, taking the place of the flyers on the suppressed slubber. System B is the ordinary roll system found on any roving frame, with drafts of from 5 to 6, giving a total draft for the complete System E of from 20 to 40.

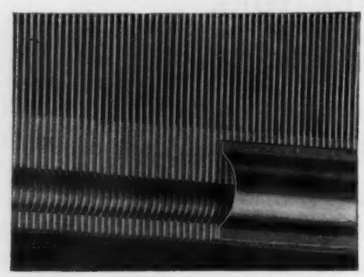
System A operates at such a low speed, it is explained, due to the long draft, that the back roll can hardly be seen to turn, thus reducing cleaning and oiling and increasing the life of the leather bands. Between the front rolls of System A and the back rolls of System B there is a draft of about 1.25, to even the roving. The false twist goes to the thin places and causes them to resist drafting, and the thick places take most of the draft and are leveled out, it is explained, the same principle of simultaneous drafting and twisting as used in the mule and in the company's wool spinning frame.

Mills which have already converted their roving frames to Whitin-Casablancas can use all parts such as cradles, bands, special rolls, etc., in connection with further conversion to the Super-Draft system.

:: :: ::

## New Reed Development

The development division of the Steel Heddle Mfg. Co., with plants at Philadelphia, Pa., and Greenville, S. C., have perfected a new development in reeds, known as the Stehedco cushion reed, which is the outcome of a series of experiments conducted to overcome the reed difficulties experienced in making the faultless fabrics demanded today. One feature pointed out is that the dents are made of Swedish steel and are protected by a cushion of solder to eliminate dent breakage through crystallization. An accurately drawn wire, soldered permanently into the reed, is used for the uniform spacing of the dents. The reed is made with flat bands for silk looms and round bands for cotton looms.



New cushion reed

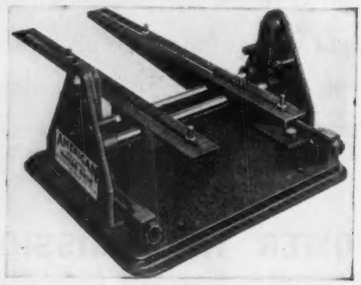
* * *

## Motor Belt Tension Control

The American Pulley Company, 4210 Wissahickon Avenue, Philadelphia, Pa., have announced the "American" tension control motor base, which, it is explained, automatically provides a motor belt tension that changes with every change in the motor load—designed to solve the major difficulties in operating flat belt drives on short centers. On short centers, it is explained, the problem of correct belt tension has always been a difficult one.

The manufacturers point out that with motors securely bolted to a fixed foundation, the frame of the motor is constantly trying to rotate in a direction opposite to that of the motor pulley and with a force, to any given load, equal to that being exerted by the pulley through the belt. This force is known as "reaction torque", which varies with every fluctuation in the load.

The new motor base, it is pointed out, automatically produces a belt tension that is always in proportion to the load, increasing the tension when occasional peak loads develop and decreasing the tension as the power to be transmitted is reduced. In this base, the force of reaction torque has been cleverly harnessed. It can be utilized, it is pointed out, because the motor is not attached to a fixed foundation, but is suspended in a cradle and is free to rotate through a limited range. The pivot axis of the cradle is placed close to the motor axis in order to obtain the maximum reaction effect, yet far enough removed so that, as the motor swings about the pivot axis, it increases the center distance enough to compensate for belt stretch and to vary the tension with each change in the load. Low belt tension at no load au-



Motor belt tension control

# 259,714 SKF SPINDLES INSTALLED SINCE 1929

INCLUDES LARGE AND SMALL INSTALLATIONS OF

**Cotton, Silk, Rayon, Worsted Spindles**

UP TO JUNE 1, 1934, IN THE U. S. A.

## Mills Using SKF Spindles

Thomaston Cotton Mills
Spartan Mills
Greenwood Cotton Mills
Arista Mills
Erwin Cotton Mills
Washington Mills
Springs Cotton Mills
Bemis Cotton Mills
Standard Knitting Mills
Hillside Cotton Mills
Gaffney Mills
Hartsville Cotton Mills

## SKF Roller Bearing Spindles Give Spinning Frame Dependability

From Maine to Florida there are 259,714 SKF Roller Bearing Spindles on the job since 1929! And whether in the Carolinas or in China, you will find the world-wide SKF organization! For in spinning frames all over the world, under all flags, SKF Spindles are increasing mill profits!

Made under SKF supervision and with a universal knowledge of spindle requirements behind them, SKF offer the best solution available to spindle problems that exist in practically every plant... not only in this country but in England and its far-flung dominions, Germany, Switzerland, Italy, Russia . . . the world over! They overcome atmospheric conditions from extreme cold to Equator heat... *mill conditions of all kinds!* And when SKF meet a problem, its spindle specialists quickly find the answer... move ever onward with progress!

**SKF SPINDLES**

SKF Industries, Inc., Front St. & Erie Ave., Philadelphia, Pa.

3277

tomatically increases to whatever tension is required up to and including peak loads.

The manufacturers point out that with this tension motor control base, when it is properly installed, the belt tension can only slightly exceed the result of the torque action, eliminating the possibility of uncontrolled and excessive belt tension which wastes power, causes belt stretch, etc. The belt tension controlled by reactive torque will handle intermittent loads without vibration. Longer belt life is claimed since stretch is reduced because the average belt tension is less and the belt has an opportunity to "recover" between peak loads and when the drive is idle.

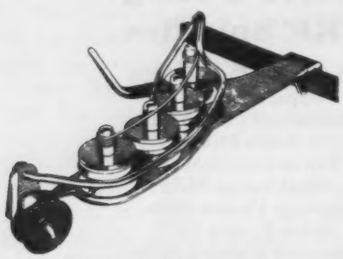
The same base is appropriate for a variety of motor sizes, it is pointed out, and is applicable to floor, wall or ceiling mountings, and operates effectively in any of these positions, providing a satisfactory drive at any angle throughout 360 degrees.

* * *

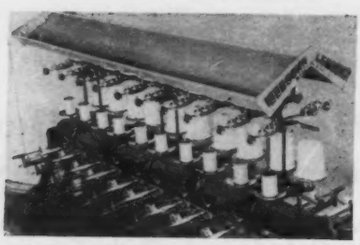
### New Progressive Disc Tension

Universal Winding Company, Boston, Mass., have announced the development of a new progressive disc tension for the Universal No. 90 filling winder, for high velocity over-end delivery, including high twist yarn. The action of the tension device will be understood from the accompanying sketch. The photograph shows the device, which is called the Disc-Quil, on a suitable carrier over the winding spindle. The manufacturers point out that instant starting is secured, the thread ballooning from the package, over-end, at maximum speed, and that there are no friction surfaces to slow the production or injure the yarn. Changing to an over-end delivery permits higher maximum speed, and permits quick starts without operative supervision.

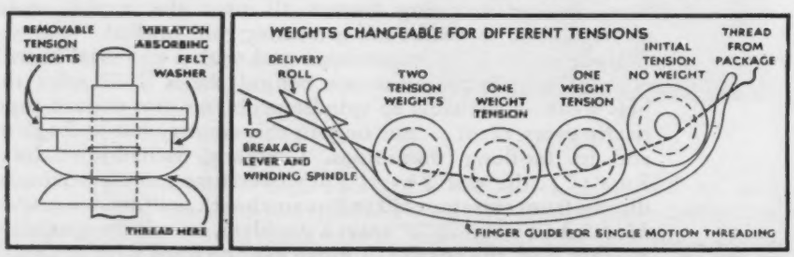
Only a single operation or motion is required for threading the device.



The Disc-Quil tension



—on a winder




Showing principle of the Disc-Quil tension for winders

* * *

### New Water Repellent

Jacques Wolf & Company, Passaic, N. J., recently placed on the market a one-bath water repellent called "Waterproof W. 559", the result of a long research for giving the dyer and finisher of yarn, hosiery and piece goods a simple process for spotproofing, rainproofing, splashproofing, and showerproofing. The manufacturers explain that this new product makes a milky emulsion for results on all fibers. By a slight adjustment of concentration, all fabrics can be made water-shedding or completely water repellent, it is pointed out.

* * *

### New Azoic Dyestuffs

Three new stabilized azoic dyestuffs, known as Diagen Red AMX, Diagen Red AR, and Diagen Scarlet AR, have recently been perfected by the Dyestuffs Division of E. I. du Pont de Nemours & Company, Wilmington, Delaware. They are described as providing a range of brilliant reds and scarlets of excellent strength and good, all-around fastness properties; and are said to be grit-free and carefully controlled for physical properties so as to insure the best of results. The new colors are expected to find their principal use for printing large patterns economically on cotton and rayon dress goods and similar fabrics.

* * *

### Improvements in Unit Heaters

Fedders Manufacturing Company, Buffalo, N. Y., have announced improvements in their line of unit heaters. Special attention has been paid to quietness, sturdiness, efficiency, etc.

## TIMELY NEWS ITEMS WITH A TEXTILE SLANT . . . . .

### Terrell Increases Territory for Economy Baler Company

Effective September 1st, Terrell Machine Company, 1200 North Church Street, Charlotte, N. C., who have handled the Economy Baler Company line of baling presses in North and South Carolina for the past two years, have been appointed sales agents for the Economy line of baling presses in the states of Georgia and Alabama as well as in the two Carolinas.

* * *

### Bell Represents Philadelphia Quartz

F. Homer Bell, representative of the Philadelphia Quartz Company, Philadelphia, makers of silicates of soda, is making his headquarters in Atlanta, from which point he will keep in close touch with the textile trade in the South and East. Mr. Bell formerly resided in St. Louis, from which point he represented the interests of his company in the central and southwestern territory.

* * *

### Carolina Yarn Tournament at Pinehurst October 26-27

The annual golf tournament of the Carolina Yarn Association will be held at Pinehurst, N. C., on Wednesday and Thursday, October 26 and 27. W. T. Dodge, secretary of the Association, states that the committee is arranging several novel features for those who attend and who do not play golf, having several tentative plans for trap shooting and other attractions afforded by this resort.

* * *

### 1934 Davison's Blue Book Is Published

Davison Publishing Company, 50 Union Square, New York City, have published the 1934 annual edition of Davison's Textile Blue Book, covering the textile industry of the United States, Canada and Mexico. The Blue Book is a recognized standard reference directory of this industry, and is now in its 69th year of publication. All listings have been corrected and brought up-to-date in this edition, which carries as usual up-to-date textile maps showing towns in which there are textile plants.

The directory covers cotton, woolen and worsted, silk, knitting, jute, linen and flax mills, dyers and finishers, mills with dyehouses, cotton brokers, commission merchants, converters, factors, lists of looms and spindles by states, and a great deal of supplementary information, such as a directory of

sources of supply of machinery, materials, etc.

The mills are classified in accordance with the type of product manufactured.

The directory is published in two editions: the office edition, with cloth and gold binding, is priced at $7.50; the handy edition, $5.00, containing all information except the classified directory of mills; and the buyers' guide, a salesman's directory, with flexible cover, is smaller, and includes full reports on all mills, price $4.00.

* * *

### New Edition of "Card Grinding in Theory and Practice"

Dronsfield Brothers, Limited, Atlas Works, King Street, Oldham, England, have recently published the new sixth edition of their treatise "Card Grinding in Theory and Practice", which, in its previous five editions, has become established as a universal text-book on the subjects covered. The new edition is well produced, both as regards printing and illustrating, and has a total of approximately 150 pages.

The volume contains as usual, the company's authoritative discussions on grinding, mounting, stripping, burnishing, etc., for cards, and is replete with practical and technical information for the mill. Since the last edition, new matter has been added, particularly one section dealing with the "revitalization of cylinder and doffer clothing" which describes the company's new needle-point grinder, which is a machine new to the carding department.

The company states that managers, department heads, etc., in textile mills may secure a copy of this book, provided the profession and place of employment are stated in the application.

* * *

### Notes on "Opening and Picking"

Gilbert R. Merrill, 364 Varnum Avenue, Lowell, Mass., has printed a pamphlet on "Opening and Picking", which is available, bound in red pressboard, at $1.75 per copy. The material in this book is based on notes prepared particularly for use in the classes of the Lowell Textile Institute, of whose faculty Mr. Merrill is a member. The notes are written to give the students an outline of the opening and picking machinery most commonly used today. Practically all of the opening and picking machinery on the market today is discussed and described in these notes, with illustrations showing the operation of the various types of machines, and with considerable practical data, including calculations, etc. A subsequent pamphlet to cover drawing and roving processes is nearly ready, according to Mr. Merrill.

NRA MEMBER U.S. WE DO OUR PART

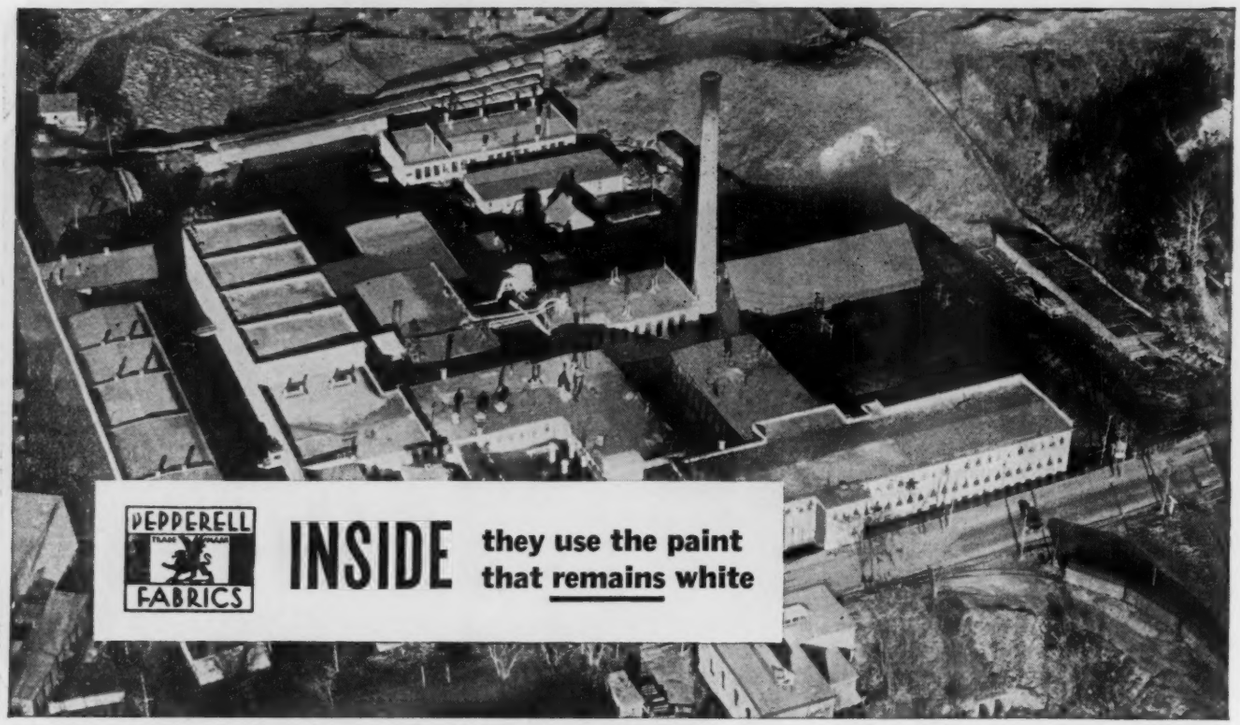
The elastic capacity of this Hinde & Dauch Textile Box meets the needs of the shipper. The boxes are constructed of corrugated fibre board and, when filled, are securely fastened with steel straps. Products weighing up to 500 lbs. are shipped in H & D textile boxes. Our booklet "Corrugated Boxes and How to Use Them" will interest you. Send for a copy. « « THE HINDE & DAUCH PAPER CO., 454 Decatur Street, Sandusky, Ohio.

HINDE & DAUCH *Engineered* TEXTILE BOXES

LIGHT WEIGHT » DURABLE » DUST-PROOF

H & D FACTORIES ARE AT YOUR SERVICE IN
BOSTON, RICHMOND, BALTIMORE, PHILADELPHIA, NEW YORK, BUFFALO, CLEVELAND, SANDUSKY, SAINT LOUIS & KANSAS CITY. IN CANADA, TORONTO & MONTREAL

# PEPPERELL chooses Interior and




AIR VIEW PEPPERELL, LEWISTON, ME., BLEACHERY. ENTIRE LEWISTON PLANT PAINTED WITH INTERIOR BARRELED SUNLIGHT

THEY first tried it in 1898—in the plant of the Lindale (Ga.) Division of the Pepperell Mfg. Co. Since then, Pepperell have used thousands of gallons of Barreled Sunlight not only in the Lindale mill but also in their four other plants.*

Although, in all this time, Pepperell have experimented with other paints, they have failed to find any other product giving the all-round lasting satisfaction and economy of Barreled Sunlight.

It is significant that recently Pepperell repainted their Lindale mills throughout with Interior Barreled Sunlight . . . their Lindale mill village complete with Outside Barreled Sunlight.

**Interior Barreled Sunlight Remains White Longest**

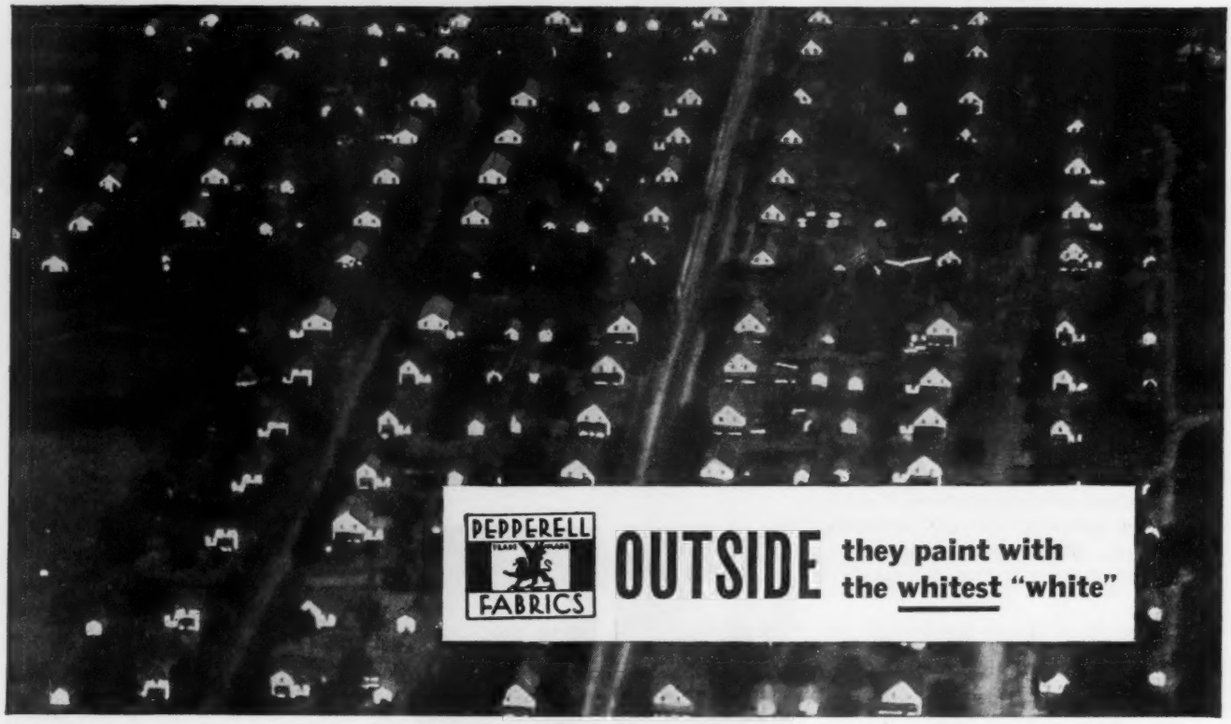
Made by the exclusive "Rice Process," Interior Barreled Sunlight resists "yellowing" . . . eliminates the frequent repainting which is the *only* remedy for yellowed white paint. It remains white upon ceilings and walls . . . continues to reflect a soft, agreeable working light . . . year after year. See explanation and Surety on next page.

Smooth, dirt-resistant, washable as tile, Interior Barreled Sunlight helps reduce Pepperell's maintenance costs. Soap and water do the job of paint upkeep quickly, easily. Repeated washings have practically no effect upon the glossy surface of Interior Barreled Sunlight.

**Outside Barreled Sunlight The *Whitest White***

Outstandingly handsome, with a rich

# Outside BARRELED SUNLIGHT




SECTION OF LINDALE (GA.) DIVISION OF PEPPERELL MFG. CO. MILL VILLAGE. ENTIRE VILLAGE PAINTED WITH OUTSIDE BARRELED SUNLIGHT

"depth" of finish all its own, Outside Barreled Sunlight has long been known as the whitest of all outside whites.

But that is only part of the story . . . Whether used in its pure white form, or tinted with a variety of practical colors, Outside Barreled Sunlight gives complete protection against weathering for a *longer* period of time.

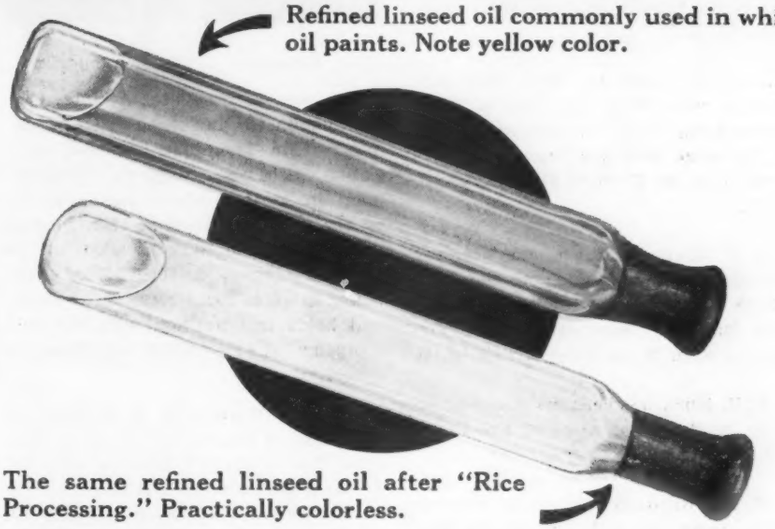
First costs are low. Outside Barreled Sunlight saves paint, time and labor. It spreads further, covers better . . . one coat equals two of ordinary paints. With less paint to be applied, time and labor costs (which account for ⅔ of the cost of any paint job) are materially reduced.

Extremely durable, Outside Barreled Sunlight wears away slowly and evenly . . . hence less scraping and sandpapering at repainting time.

Write for complete information and list of other noted textile users of Barreled Sunlight. Address U. S. Gutta Percha Paint Company, 8-J Dudley Street, Providence, R. I. Branches or distributors in all principal cities. (For Pacific Coast, W. P. Fuller & Co.)

**Pepperell plants at Fall River, Mass., Biddeford and Lewiston, Maine, and Opelika, Ala., also painted with Interior Barreled Sunlight. Mill Village at Opelika also painted with Outside Barreled Sunlight.*

**Refined linseed oil commonly used in white oil paints. Note yellow color.**



**The same refined linseed oil after "Rice Processing." Practically colorless.**

**UPPER VIAL** shows refined linseed oil commonly used in white paints. The yellow color disappears when this oil is mixed with white pigments. But don't be fooled, it is still there . . . sooner or later to appear upon your ceilings and walls.

**SAME OIL** treated by the "Rice Process" appears as shown in the lower vial. The "yellow" has been *taken out*, not just bleached to temporary whiteness. The "Rice Process" also gives Barreled Sunlight remarkable hiding power, ease of flow.

**YOUR SURETY**—**We maintain that Interior Barreled Sunlight, the "Rice Process" White, will remain white longer than any oil-gloss paint or enamel, domestic or foreign, applied under the same normal service conditions and according to our specifications. If it does not do so, we will give, free, enough Barreled Sunlight to repaint the job.**

# PERSONAL NOTES
## about Men You Know

PAUL SMITH is superintendent of the Luanna Mills, Inc., Toccoa, Ga., manufacturers of 30s single and ply yarns. He was formerly overseer of spinning at the Arnall Mills, Sargent, Ga.

OSCAR CREWS has been promoted to overseer of carding and spinning at the Davidson Cotton Mills, Davidson, N. C. OSCAR GANT has been made assistant overseer of spooling, winding and twisting at this plant, where J. M. MORRIS recently resigned the position of overseer of carding and spinning.

J. W. SKIPPER, SR., has become assistant superintendent of the Aponaug Mfg. Company, Kosciusko, Miss. He was formerly general overseer of carding and spinning for the Alabama Mills, Inc., with ten plants in Alabama and headquarters at Birmingham.

CLAUDE H. LOCKMAN has become overseer of weaving at the Cowpens Mills, Cowpens, S. C.

H. H. WOOD is now assistant superintendent in addition to overseer of weaving at the Oconee Textiles, Inc., Westminster, S. C.

LACY MAULDEN has been made production manager of the Cannon Mills, Kannapolis, N. C. He succeeds HOMER L. BALLARD, who has become superintendent of the Roxboro Mills, Roxboro, N. C.

L. R. REYNOLDS has become overseer of warping and slashing at the Blue Ridge Rayon Mills, Altavista, Va. He was formerly connected with the Virginia Cotton Mills, Swepsonville, N. C.

P. R. MORK has been made vice-president in charge of sales of the Crane Co., Chicago, Ill.

E. A. SHEPHERD has become overseer of napping and finishing at the Randolph Mills, Inc., Franklinville, N. C. He was formerly overseer of weaving at the Oconee Mfg. Company, Whitehall, Ga.

R. E. STRICKLAND has become overseer of spinning at the Anderson Cotton Mills, Anderson, S. C. He was formerly connected with the Appleton Mills, at Anderson.

W. P. NICHOLSON has become overseer of carding at the Norris Cotton Mills, Cateechee, S. C. He was formerly second hand in carding at Mill No. 1 and Mill No. 2, Pelzer Mfg. Company, Pelzer, S. C.

J. A. ROSS has become overseer of weaving at the Waxahachie Cotton Mills, Waxahachie, Texas. R. S. MITCHEM recently became overseer of carding at this plant.

ARTHUR H. MASON recently resigned as superintendent at the National Weaving Company, Lowell, N. C.

GLEE B. THOMPSON and FRED M. SUCHKE are among the directors of the Pioneer Atlanta Company, manufacturers of loom harness, etc., Atlanta, Ga., as announced in these pages last month. Mr. Thompson has been associated with the Andrews Company plant in Atlanta, which was acquired by the new organization. Mr. Suchke has been general superintendent of the Atlanta Harness & Reed Mfg. Company, Atlanta, for a number of years, and holds this position with the new company at its plant on Simpson Street.

Mr. Thompson

Mr. Suchke

JOHN T. WIGINGTON, a graduate of the Clemson Textile School of the 1923 class, has accepted a position with the U. S. Department of Agriculture. He is now engaged in cotton spinning research at Clemson College, S. C. Mr. Wigington was formerly superintendent of Edna Mills Corp., Reidsville, N. C.

R. L. LEE, JR., assistant professor of carding and spinning at the Clemson Textile School, who has been engaged in textile research with the Textile Foundation during the summer, has returned to the Clemson Textile School to teach in the carding and spinning department.

R. C. EDWARDS, graduate of the Clemson Textile School, class of 1933, has resigned his position with the Dunean Mills, Greenville, S. C., to accept a position with the Charles Mills Co., Red Springs, N. C.

E. B. SPETH, graduate of the 1931 class of the Clemson Textile School, has resigned his position with the Gregg Dyeing Company, Graniteville, S. C., to accept a position with the Langley Mills, Langley, S. C.

### Obituary

J. N. SMITH, for 29 years superintendent of the Woodruff (S. C.) plant of the Brandon Corporation, died recently at the age of 72 years. He had been in Woodruff since 1903, having moved there from Darlington, S. C. He is survived by Mrs. Smith, three sons and one daughter.

J. C. SAUNDERS, manager of the Bonham Cotton Mills, Bonham, Texas, died on August 23 following a lingering illness. Mr. Saunders, who had been connected with the mill for 30 years as manager, is survived by Mrs. Saunders, three sons and a daughter.

J. A. CLINE, father of Ralph E. Cline, general manager of the Broad River Mills, Blacksburg, S. C., died at his home in Concord, N. C., recently, at 82 years of age.

A. P. THORPE, president of the Rocky Mount Mills, Rocky Mount, N. C., passed away in Philadelphia, Pa., on Wednesday, September 5th.

JOHN F. FAIRCHILD, for 25 years an overseer at the Mooresville Cotton Mills, Mooresville, N. C., up until 1930, passed away recently in a Charlotte, N. C., hospital, at 59 years of age.

W. D. JENKINS, overseer of weaving at the Scottdale Mills, Scottdale, Ga., passed away during the first week in September.

O. W. SMITH, overseer of spinning, The Trion Company, Trion, Ga., passed away on September 6 following a heart attack, which was said to have been hastened due to worry incident to the textile strike.

WADDY C. THOMSON, 78, passed away recently at his home in Lancaster, S. C. For many years, after entering the textile business as an associate of the late LEROY SPRINGS, Mr. Thomson was connected with the Lancaster Cotton Mills, subsequently becoming vice-president of the Springs Cotton Mills.

# TWIST FROM CHEESES

## WOUND ON THE

# BARBER-COLMAN AUTOMATIC SPOOLER

## AND ASSURE

# MINIMUM COST

## FOR SPOOLING AND TWISTING

•

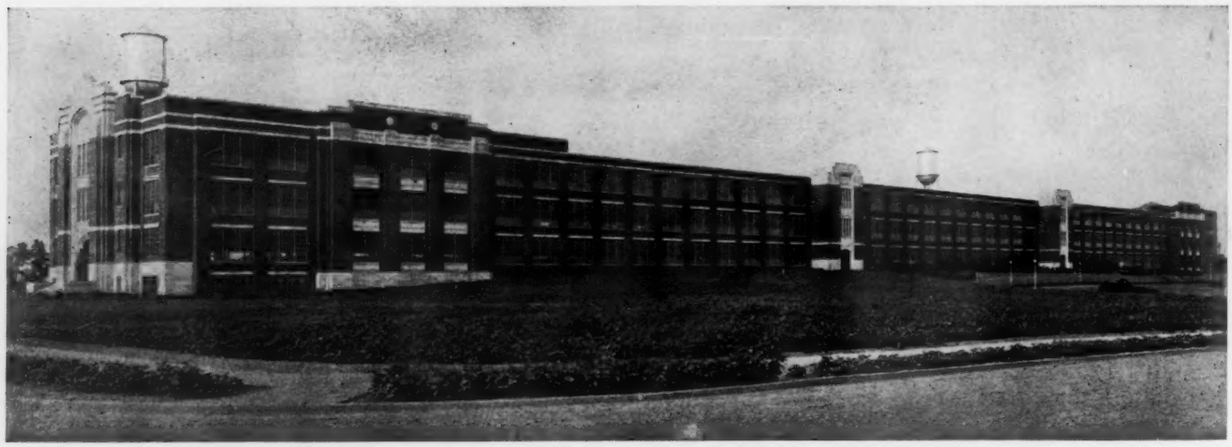
TWISTER CREELS NOW ARRANGED FOR SPOOLS MAY BE EASILY AND ECONOMICALLY ADAPTED FOR CHEESES CONTAINING FROM 25% TO 100% MORE YARN

•

## BARBER-COLMAN COMPANY

FRAMINGHAM, MASS. ROCKFORD, ILL. GREENVILLE, S. C.

# The largest mill in the World devoted *exclusively* to tire cord



MARTHA MILL, THOMASTON, GEORGIA

## . . . uses SPINNA CALF

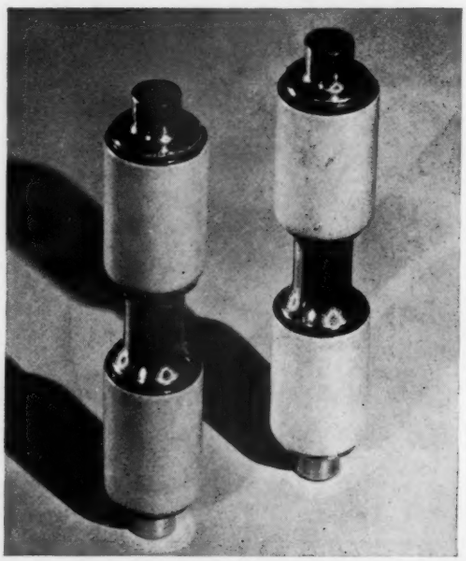
to spin the yarn for the fabric of

## LIFE-SAVER Golden Ply

*used in the famous*

## Goodrich *Safety* Silvertowns

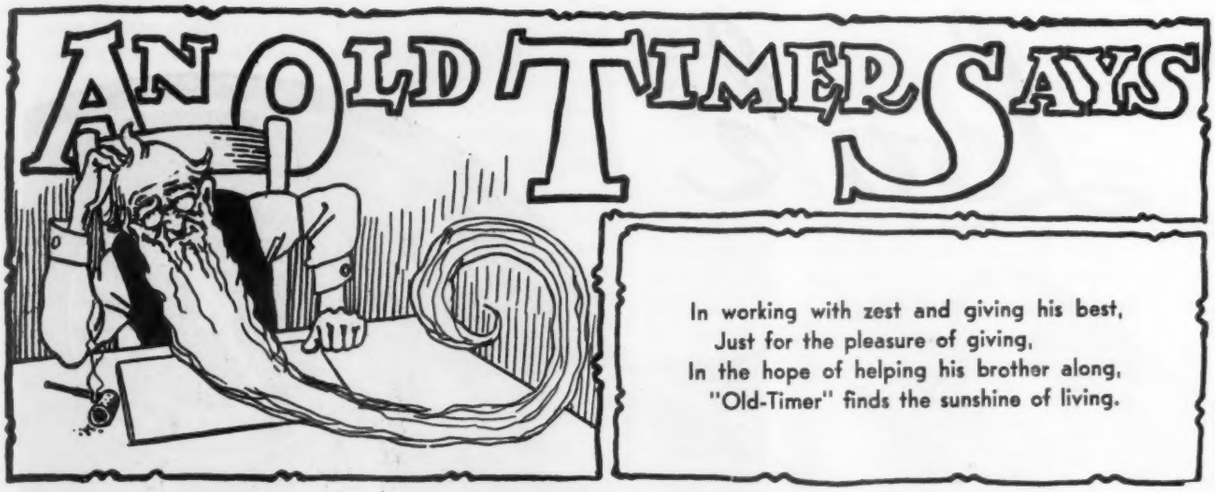
The super-resistance of this fabric depends, basically, upon the quality and strength spun into the yarn . . . . and the Martha Mill and Goodrich are well justified in their dependence on Spinna Calf to produce the results desired.



A. C. LAWRENCE LEATHER CO.

*Specialists in Textile Leathers*

BOSTON, MASS. PEABODY, MASS. GREENVILLE, S. C.


AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

# Will We Ever Learn?

JUDGING from all past history, the answer to the above question is, decidedly and most positively, NO!

*Well, confound it,* OLD-TIMER, *you need not yell it so loud. I heard you when you said NO so loud, but you forgot what you were saying NO about.*

Oh, nothing, JIM. In the first place, I don't guess you would understand—in the next place, I don't suppose you would be interested—and in the next place, I don't suppose you would give a damn anyway. So skip it. You go on reading your paper and I will continue reading mine.

*All right, as soon as I get through looking at the funny part, you can yell NO as loud as you please and talk as much as you please.*

**(10 Minutes later)**

*Now, come on,* OLD-TIMER, *and let's hear what's on your mind.*

Well, JIM, it's another one of those human nature problems that I simply cannot solve. The study of human nature is so deep, so complicated and all that kind of thing, and yet so simple, I cannot figure it out at all.

*All right now, you say it is complicated and at the same time you say it is simple. In other words, black is white, good is bad, high is low, and what have you. I believe I can talk just about as foolish as you can, so suppose you come across with something a little more definite, so at least we can have some idea what you have in mind.*

O. K. JIM, promise not to go to sleep for 15 minutes and I will elucidate.

*You will what?*

Never mind, never mind, just don't interrupt me for 15 minutes and then you can have your say.

When I put that question to you—*will we ever learn?*—I was just reading an account of some things that happened in Europe 100 years ago, or about the time that steam power was coming into the commercial world—the factories were beginning to be operated by steam—there were no railroads—no telegraph—no telephones—no radio—and a lot of other No's.

Well, it seems there was a sort of a depression (maybe they just called it hard times) along about that time, and listen to what one of the big shots had to say:

"Owing to the competition among workers, as a result of excessive population, machinery strengthens competition, diminishes wages, and lengthens the working day. The state should control the multiplication of inventions (there are too many things being invented). People should go back to the land. Disperse the cities. The rich are those who control the machines and the poor are those who mind them. There is wealth enough for everybody, if it can only be divided, etc."

There is no need to take up space quoting further, because here are more quotations that I wish to quote, that were spoken about 50 years later. Meantime:

"The steam engine has multiplied its power in numerous ways. Population has doubled. In fact, in the cities it has more than doubled and yet there is food in plenty and running over. Railroads are strung all over the country. You can travel 300 miles a day. Steamships call at every port in the civilized world. People are seeing and buying things they never knew were in the world."

About this time Bessemer steel comes to the world. Vessels are built of it (Iron is made to float. Impossible, people said when they heard of it.) The telegraph has come.

Prices of everything start going down. Men, financial men, have lost everything. There is too much food. Too much of everything.

Another depression or whatever you call it. Then the same cry goes up from the leaders—back to the land—disperse the cities—stop inventions—machines have thrown the laboring people out of work—people cannot buy because they have no work.

Is this not the same old cry (probably with some variation and different conditions) that went up 50 years ago? People who were rich 50 years ago are

# *Look*

# A THERMOMETER *plus* A CONTROLLER

## *At an unusually* LOW PRICE

There is nothing like the new **1119 Controller.** It will handle all kinds of regular control problems, and its reasonable price make it a good investment in many places you now control by hand.

And you get accurate temperature readings on this controller at a price within that of ordinary non-indicating regulators. Actually, you have a separate Indicating Thermometer but with one bulb and case. You know the temperature always.

Although inexpensive, it is air-operated . . . positive in operation . . . as *easy to set* as a radio dial . . . can be set at any desired point within its range . . . and will give money-saving, automatic control for years.

This new type controller is another pioneering step by Foxboro — like the development of the Recorder-Controller fifteen years ago, and the Stabilog five years ago. With the most complete line of control instruments, you are assured of getting from Foxboro the correct types for your particular needs at the least cost.

There are places in your plant where these automatic controllers will save you money. We can help find them. Write today for complete information on the **1119 Controller.**

FOXBORO
REG. U. S. PAT. OFF.
*THE COMPASS OF INDUSTRY*

THE FOXBORO COMPANY
FOXBORO, MASS., U. S. A.
BRANCH OFFICES IN ALL PRINCIPAL CITIES

●● COMPLETE INDUSTRIAL INSTRUMENTATION ●●

poor today. Still you hear people say there is enough wealth for everybody if it can only be divided.

Now come on down to the last few years. Haven't you heard the same, or practically the same argument in the last few years that I have just related to you from reading history of 50 years ago and 100 years ago?

Fifty years ago the 8-hour day, and the dividing up of work, was advocated and on the same general grounds or arguments that it was just before it went into effect last year. (Don't misunderstand me. I think the 8-hour day is one of the best things that ever happened to the textile industry. But I cannot go into that argument here now because space will not permit and it is also not necessary in order to bring out the one thought I am trying to present to my brother overseers and superintendents—especially those under 40 years old.)

To get back onto the subject, remember when the papers were all full of the argument that technology and the invention of machines had so increased mechanical power per worker, etc. And you had probably found in your own mill that a weaver could operate 80 looms where he had been operating 40, and other operatives all through the mill had been given more machines. Well, it sounded just about right to you, did it not? You could see in your own mill where you were working many less operatives, but don't forget, brother, that the overseers and superintendents in the mills 50 years ago could see the same conditions when weavers went from two and four looms to six, and only a few years later when they went to eight.

I well remember, not so many years ago, when speaking of cycles; in fact, about 1907, that when the overseer in the mill where I was working gave his weavers eight looms, an overseer in another mill, situated only a few miles away, made the remark that the overseer who gave his weavers eight looms, would soon be out of a job; that any mill man knew a weaver could never successfully run eight looms. (Of course this conversation was in reference to what we call common looms on suck-shuttle looms.) I lived to see the man who gave his weavers eight looms a successful superintendent, then manager, and the other man out of a job and living with his children when he died.

Just remember this one statement of fact: Unemployment is not new. *It is historic.* That is, you will see it come and go just like other things.

Now, suppose we compare some of the things in the mills of 30 years ago with the machines, processes, etc., of today.

Thirty years ago we had 3-process pickers, 3-process drawing, inclined trunks for cleaning (and an inclined trunk is a good cleaner, but the devil when you have a fire), and textile engineers were advocating long traverses with large rings.

In a few years we gradually drifted away from those ideas and got back on a shorter traverse with smaller ring and more front roll speed to make up for it. Fly frames went down to 7 x 3 for roving to make 28½s and 38½s numbers, which were then considered print cloth numbers.

Now, in the past few years we have gotten down to one-process pickers but having to put in cleaning machinery in the opening room to make up for the loss in picking machinery, and some of the textile engineers are again recommending long traverse and larger rings for 30s and 40s, which are now considered print cloth numbers.

In trying to analyze these cycles of changes and ideas, it seems to me that possibly one explanation is that as one generation of engineers and mill managers dies out, along comes the younger generation who see, for example, mills running small packages, short traverses, small rings, etc., and say to themselves, why not make larger packages, use longer traverses and larger rings, and thereby greatly reduce the manufacturing cost. The younger man feels that he has a *new* idea, not realizing that if he would only look into a little past history he would see where all of those things have been tried out.

I well remember a device I had gotten up several years ago. It was a device I had never seen anything like. I made numerous inquiries and could find none of my co-workers who had ever heard of the idea before. I had a "gold mine" and had already made many plans about what I would do with all this money I was going to get.

After spending quite a little sum in getting out my model, drawings, etc., I employed a patent attorney to put it through. You can imagine my surprise to receive in about three weeks copies of two patents which covered my wonderful(?) idea in every detail. One of them was so old the patent rights (17 years) had run out.

Cycles, cycles, cycles—It seems that everything goes in cycles—depressions—or hard times, unemployment and all of those things. Fifty years ago people were complaining of the same things we are complaining of today. One hundred years ago it was the same old story.

Now, I am leading up to that strange part of human nature referred to. *Will we ever learn?*

Can you explain why people, business men, overseers and superintendents, can't learn why these cycles are bound to occur? They have been occurring as far back as we have any history. Still, when everybody starts to sell what they have, you fall in line and sell too. When everybody is buying, then you go in debt for 10 or 15 years in order to buy too.

See what I am leading up to, It is not something you do not know—it is something that you have not the nerve to back your own judgment on. Why can't the young man—the man under 40—profit by the mistakes of the old-timers?

For the past three years everything has been so cheap, far below normal cost, in many instances, that if the average young man had had nerve enough to have borrowed and borrowed all the money he could get and bought anything, anything in the United States, he would in 10 years be independently rich.

*Will we ever learn?*

Again. I am sorry to have to say NO.

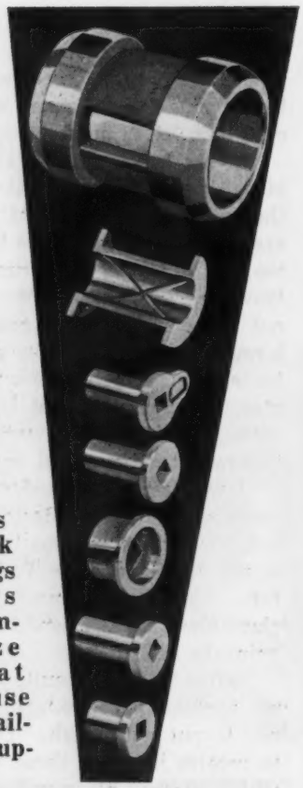
This old world has been here a long time, and since civilization began—or rather, since business as we know it began—it has always been the same. We will *never* learn. We can't see it until it is too late.

(Continued on page 114.)

# NEW TEXTILE Applications *with* BRONZE BEARINGS IMPROVE MACHINE PERFORMANCE

• • •

Thousands of applications served by COMPLETE stock of General Purpose Bushings Electric Motor Bushings Johnson UNIVERSAL completely machined Bronze Bars . . . Carried at ATLANTA Warehouse 544 Spring Street. Also available thru your Industrial Supply Distributor.



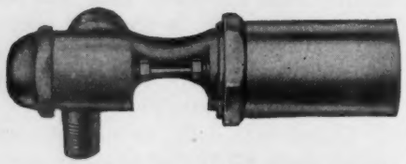
**JOHNSON BRONZE**

Factory and General Offices • New Castle Pa.

# An Inefficient Head Means WASTE

A humidifier head that won't maintain full capacity without constant attention not only wastes horsepower, time and labor, but fails to humidify properly which results in other wastes. Many mills are replacing old heads with the

# JACKSON



*Automatic* **ATOMIZERS**

which will never clog—they automatically clean every time the system shuts off, maintaining FULL capacity without attention. All parts are non-corrosive. It is simple, non-adjustable, dependable. Can be connected to any system using 30 lb. air pressure, gravity water supply.

Write for full details. Quotations on revamping or complete installations gladly furnished.

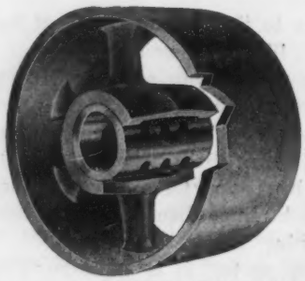
**JACKSON MOISTENING CO., INC.**

533 Bedford St. Fall River, Mass.

*Southern Representative:*

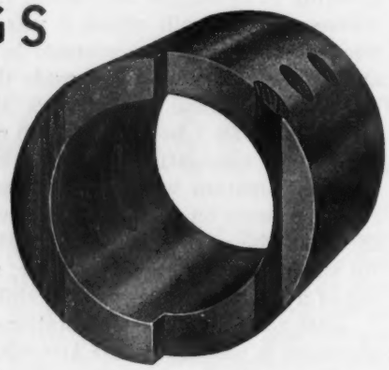
*G. A. White & Co., P. O. Box 533, Charlotte, N. C.*

# MOCCASIN BUSHINGS



STANDARD EQUIPMENT IN MANY TEXTILE MACHINES

Builders of world-known textile machinery have standardized on them for over 15 years.
We have made broad claims for the mechanical perfection of Moccasin Bushings and have yet to report our first failure.
They require the oiler's attention but a few times a year. They insure every drop of oil reaching the desired spot—the bearing. Nothing but clean oil can reach the bearing surfaces.
And finally—
Moccasin Bushings are *guaranteed* to give the fullest satisfaction in your most *troublesome bearings.*
We have an interesting booklet that gives sound reasons for standardizing on Moccasin Bushings



MOCCASIN BUSHING COMPANY, Chattanooga, Tenn.
Makers of Brass and Bronze Castings of Every Description

# CLINTON STARCHES

FOR ALL TEXTILE PURPOSES

Manufactured by

CLINTON COMPANY

CLINTON, IOWA

NRA MEMBER U.S. WE DO OUR PART

QUALITY SERVICE

# HOW OTHER MEN MANAGE

## Practical Discussions by Cotton's Readers On all Varieties of Mill Subjects

### A Method of Handling a Large Variety of Filling for the Weave Room

EDITOR COTTON:

The problem outlined by "CONTRIBUTOR NO. 6334" is common to most mills making a wide variety of fabrics or using many different colors. He outlined in August COTTON his problem: taking care of 55 different kinds of filling (colors and numbers) in his weave room, asking for suggestions on how best to do this.

His idea of having filling bins built in the weave room is probably the best solution to his trouble. The details of these bins should be comparatively simple, especially if the weave room is in a multiple story building with some spare floor space above it.

He says he has 424 filling trucks now and it is improbable that all of these are ever filled and stored in the weave room. However, our figures must have some basis and we shall assume that all trucks are needed to store filling. The usual size of these old wooden trucks is 24 inches wide, 48 inches long and 30 inches deep. This means that the trucks now occupy 3,392 square feet of floor space without making any allowance for alleys between them. With this many trucks, it would be almost impossible to get out the yarn needed without leaving some alley space and it is probable that this increases the floor space occupied to approximately 5,500 square feet.

Since he is using 424 trucks for 55 different kinds of filling, there is an average of 7¾ trucks for each kind of yarn. Each truck has a capacity of about 20 cubic feet and he would therefore need about 155 cubic feet for each kind of yarn.

Assuming that the weave room is in a multiple story building and that there is some spare floor space in the room above, the easiest way of filling the bins is through hoppers in the floor above. The normal story height of most mills is 15 feet from floor to ceiling and the bottom of the bins should be a little above the top of the trucks. This will permit the operative to easily fill the trucks from the bins when the yarn is needed for the looms. This will leave about 10 or 15 feet of height for the bins and they will need an area of about 14 to 16 feet. Under these circumstances, the bins should be built about four feet square.

Sixty bins of this size would take up a floor space of about 1,000 square feet, but we must leave alley space between them for trucks to carry the yarn to the looms. The bins can be arranged in any way to suit the floor space available but the simplest arrangement would be to group them in four groups of 16 bins each. This will give 64 bins which is a little more than his requirements but the extra bins would probably be needed at times. Each group of bins would be two bins thick and eight bins long with at least three feet between each group for trucking. This arrangement would require a floor space of 47 feet x 35 feet or 1,645 square feet, in the weave room and an equal space in the floor above for the hoppers.

This lay-out will give him a little over 10,000 cubic feet of storage space against his present capacity of 8,500 cubic feet in the trucks. While we are increasing his storage capacity by 17 per cent, we are reducing the total floor space used from 5,500 square feet in one floor to 3,290 square feet in two floors, or a decrease of 40 per cent.

If there is no vacant floor space above, the height of the bins must be reduced about four feet so they can be fed from the top in the weave room. A loading platform would be needed between the bins and this would be located about 6½ or 7 feet below the ceiling. In this case, the size of the bins should be increased to make up for the loss in height, and the weave room floor space needed would be slightly increased. Even with this change, he would save more than half the weave room space now taken up by trucks.

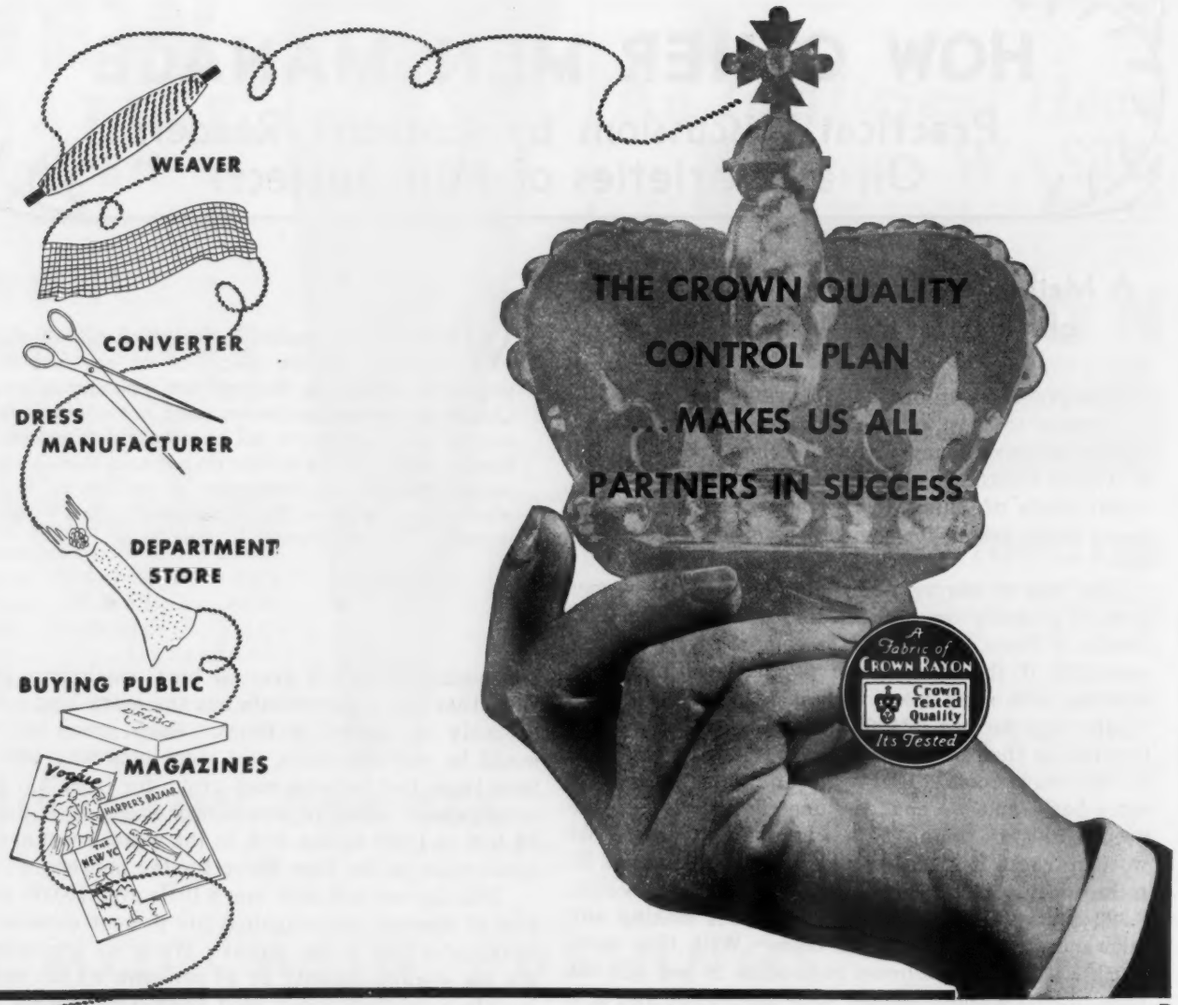
Each bin should be provided with a sliding door for removal of the yarn and the floor of the bins should slope toward the door to facilitate removing the bobbins. Each bin should be plainly marked at two places with the yarn size and color. One mark should be at the top for the operative loading the bin and the other near the door through which the bobbins are removed. If the yarn sizes and colors are fairly constant, this data should be painted on the bin, but if changes are frequent, the identification marks should be on metal plates which can be moved around when the yarn changes.

The construction of the bins can be made very sim-

◆ ◆

WE invite our readers to make use of this department for the discussion of any and all prob'ems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆




WHEN you *buy* Crown Rayon Yarn and Seraceta, and when you *sell* it as fabric...you don't "go it" alone... the unique five-way plan of The Viscose Company is the all-inclusive program that works for —the Mill Owner, the Weaver, the Converter, the Fashion Manufacturer, the Retailer—and the Ultimate Consumer!

CROWN AND SERACETA RAYON YARNS—uniform in quality, adaptable to advance fashion trends—afford the Weaver his golden opportunity to create fabrics of inimitable glamour and originality.

**Under the Crown Quality Control Plan,** fabrics of Crown Rayon or Seraceta may be submitted to The Viscose Company. They are then tested in the official laboratory of the National Retail Dry Goods Association for fabric construction, color fastness, dry cleanability or washability and many other requirements. If approved—they are awarded the Crown Tested Quality Grade-Mark—and the manufacturer enters into a contract with The Viscose Company as a licensee, under the Plan.

**Manufacturers** buying fabrics identified by the Crown Tested Quality Grade-Mark know that they are investing in textures of enduring beauty, quality, and of first style importance.

**Buyers,** representing the country's finest department and specialty stores, look for the Crown Grade-Mark when they buy—it stands for customer satisfaction, it is their insurance against returns... and because it is nationally advertised—it brings with it prestige and selling force.

**Fashion-wise Consumers,** whose views are molded by Vogue, Harper's Bazaar and The New Yorker, are familiar with the Crown Tag... they see it in advertisements over the signatures of New York's finest stores, they find it attached to their most important fashion purchases.

**The Crown Tested Quality Grade-Mark** is the "calling card" of a fashion aristocrat—a fabric created of Crown Rayon! Demand it when you buy... Use it when you sell. The Success Trend of Fall and Winter 1934 is toward Crown Rayon—and the five-way plan, —the Crown Quality Control Plan of The Viscose Company!

**CROWN RAYON YARN and SERACETA** (Crown acetate Rayon), the NEW Rayons of Fashion, Products of THE VISCOSE COMPANY, World's Largest Producers of Rayon, 200 Madison Avenue, New York City... *We comply with the NRA*

ple or as elaborate as desired. If he wants to condition the yarn in these bins, the inside of the bins can be lined with galvanized iron, copper or Monel metal, depending upon the solution used for conditioning and on other local factors. A feed pipe for the conditioning solution can be run around each group of bins with a branch line into each bin controlled by a valve located about seven feet above the floor. Each branch line should be equipped with a spray head or he can use a common sprinkler head in each bin with good results.

This outline will have to be modified to suit local conditions, but a system of this kind will relieve the trouble the mill has been having, and will make all yarn immediately available when needed.

CONTRIBUTOR No. 6336.

## Preventing Slack Selvages on Drills

EDITOR COTTON:

The following is written in answer to a question in "HOW OTHER MEN MANAGE" and is regarding the trouble with slack selvage on a three-leaf drill. It is rather difficult to suggest a remedy for an unseen ailment. For most troubles in a cotton mill, there are several reasons and frequently the cures vary from inexpensive to expensive, from makeshift to permanent. So, in discussing the trouble one man has had with "slackness in cloth on each selvage extending three or four inches in the cloth when straightened out", it is necessary to give consideration to this question from two angles. These are, first, when it occurs on all looms and, second, when it occurs on a few looms.

The writer can lend a sympathetic ear to the man having this trouble for he has had the same trouble; in fact, still does occasionally on the same type three-harness drill with 12s warp and 18s filling. If the slack selvage occurs on all looms it is possible that the yarn numbers are responsible. In our case on this same type fabric, we started with 12s warp but changed to 14s which seems to give a better balanced cloth that is more acceptable to our customers. If the slack selvage occurs on all looms, we would suggest trying a lighter warp yarn. At one time we had trouble with a fabric on which the selvage was slack and inclined to curl on the finishing machine. Finally the trouble was practically eliminated by lightening the warp yarn.

We can take it for granted that the take-up rolls should be of uniform size throughout their length. Obviously any variation would result in uneven cloth. However, we would suggest that this man check the take-up roll covering. Again quoting from experience, we painfully remember buying a sand roll fillet from a salesman who claimed his was the strongest on the market. It was—also it was the thickest, and after putting it on we found that it increased the roll size so that the loom put about two picks less than the pick gear called for. Not only should the fillet be the right thickness, it should be put on smoothly and replaced if it breaks or slips and overlaps. The writer once made a fabric with the fillet doubled at each selvage to keep the cloth open at the selvages for rubberizing. The result was a selvage that was as open as the body of the cloth, but it was also slack and wavy.

Slack selvages occurring on a few looms from time to time are probably the result of faulty setting. The only remedy is a systematic regard for loom settings which must be pushed incessantly for good results. When a slack selvage is found, the loom should be checked over carefully. The lay of the loom should be kept level as should the take-up rolls. The temples should be the same clearance from the shuttle race, not too high nor too low.

Other points that are important in preventing or detecting slack selvages are harness settings. In shading the harness, each harness should come down as nearly alike as possible, each one touching the shuttle race but not pulled down low enough so there will be extra strain on the yarn. In setting three harnesses they should be levelled at the top shaft. Sometimes we run into a harness shaft that is a little crooked on the end that would have to be just a little up off of the shuttle race on one end of this harness in order to bring the top shafts of the harness level as the two shades are up and one down. Setting in this manner will bring the yarn of the two shades up each time practically even so that practically the same tension will result on the two shades that are up each time.

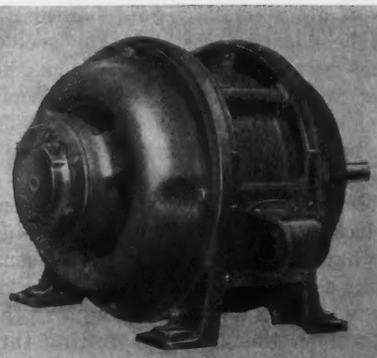
We very often run into little things causing the trouble. Sometimes our jack sticks and harness straps, or hooks, will cause trouble. This happens when one strap is longer than its companion or, in the case of hooks, we sometimes find that one of the screw eyes is from ¼-inch to ½-inch longer than the other or that it has not been screwed up into the harness shaft as deep as the other one. This causes one side of the harness in pulling down to be slacker on the side where the long screw is, or the long strap, which causes the yarn to weave up slacker on this side of the cloth. It should be pointed out that a poor setting on one harness can give a slack selvage even if the other two are set properly. By evening up all harness shafts, screw eyes and jack hooks, the harness will come down with the same tension on each side of the cloth and an even tension throughout its width will result.

There is one other item that is important for elimination of slack selvages. This is the timing of the harness cams. After a long experience, during which we have tried numerous settings, we have found that in our case it is best to bring the lay forward to about 2 to 2½ inches from the fell of the cloth, levelling the two front harnesses. This setting will give a shuttle clearance allowing the shuttle to run freely, not dragging in or out of either selvage. Along this same line the good results expected from the proper timing of the harness cams can be seriously impaired if pickers are not kept in good shape. Properly parallel so that the shuttle will be thrown properly through the shade and not ride the yarn on either selvage.

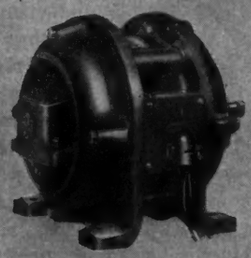
At the start of this article we made the statement that frequently the curing of troubles can be expensive. In this particular case, it is possible that a lighter warp yarn, which would be more expensive, is the solution. If he is not already doing so, he

# Prepare for Greater Profits

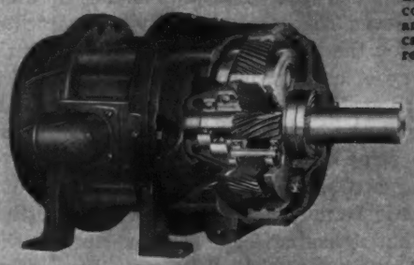
## Modernize Now with these Modern G-E Drives



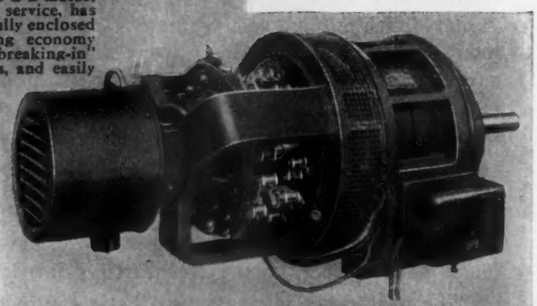
FOR DRIVES AMID LINT AND DIRT... the G-E screenless, open textile motor can be used with confidence. Because of its large, unobstructed air-passages and its directive ventilation, this motor discharges the extraneous matter drawn in with the ventilating air.



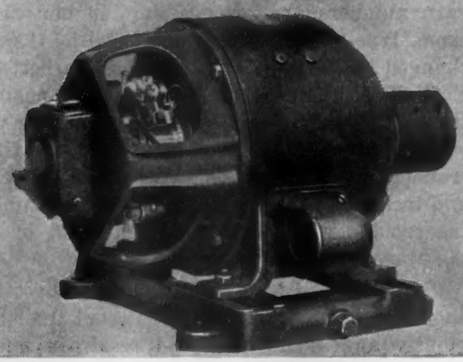
FOR YOUR LOOMS... this G-E motor, designed especially for such service, has many important features—totally enclosed construction, good operating economy and power-factor, ample "breaking-in" capacity, large oil reservoirs, and easily repacked bearings.



FOR YOUR LOW-SPEED DRIVES... the G-E gear-motor provides a compact, low-speed unit, ready for direct connection to your machines. Available in speeds from 11 to 600 rpm., in sizes from 1/6 to 75 hp.



FOR FINISHING MACHINES... if your power is a-c., you can use either the Type BTA motor (above), which offers you the desirable adjustable-speed characteristics of a d-c. shunt-wound motor, or, with suitable conversion equipment, the dependable Type B direct-current motor shown below.



THE right kind of modernization soon pays for itself—and then adds to profits. Investigate the worth-while additions which modern G-E drives can make to *your* profits.

The drives illustrated here, together with a wide variety of other motors and control, as well as wire, cable, transformers, etc., are all available in the *complete G-E line.* From it you can obtain the *right* equipment for every electrical application in your plant.

Moreover, you'll find G-E sales and engineering offices, service shops, and warehouses conveniently located near every textile center—all at your service, ready to "follow through" on every detail of your electrical requirements. For particulars, address the nearest G-E office; or General Electric, Dept. 6D-201, Schenectady, N. Y.

There's a size and type of G-E control built to match exactly the requirements of every G-E motor.

020-62

**GENERAL ELECTRIC**

should change his pickers when a new shuttle is put in the loom. This seems expensive. Our experience has been that satisfying the customer regardless of expense is the way to stay in business. When a saving is to be made it is far better not to make it if quality is to be lowered.

CONTRIBUTOR No. 6318.

## "Wash" Gives Further Information on Making a Perfect 5.00-Hank Roving

*(Editor's Note: On page 87 of the July issue, "WASH" presented his ideal lay-out for making 5.00-hank roving. A northern reader asked for further details. The inquiry was submitted to "WASH" whose reply is presented here.)*

EDITOR COTTON:

Your inquirer puts the two following questions:

(1) What staple and grade of cotton would be most satisfactory for making the 5.00-hank roving, as mentioned in my article in the July issue; and

(2) Would this 5.00-hank roving be satisfactory to use in the manufacturing of 24s, 26s and 30s single carded yarn?

I hope the inquirer will study the following carefully.

When I write an article for COTTON I always give facts representing past experience in my mill life. No contributor should mislead any manufacturer by giving a fancied organization. It is very easy to tell others what to do on paper, but when you are in charge of a department or a mill, and are told to carry out fancied organizations, which often appear in print, this frequently results, in most cases, in failure and unnecessary expense.

The organization given by me in the July issue of COTTON was a hang-up I had in a New York cotton mill, where I was superintendent for nearly five years. We made a high grade 40s yarn from Peeler and Egyptian cotton. In a New Hampshire mill, where I was superintendent, we ran 27s yarn from Strict Low Middling. In a Massachusetts mill, where I was overseer of carding for 12 years, we ran 40s yarn for shade cloth, and the same organization was run all that time, and the stock run was Good Middling cotton.

For the past few years, the mills have been giving more attention to the grade of cotton that they use, because competition has forced them to specialize on certain grades of cloth, and it is, therefore, necessary to buy only the grade suitable for the class of goods to be made. Therefore, the grade of a cotton is determined by its ultimate value to the manufacturer.

The grade does not indicate the length of staple of the cotton, but variety usually does. However, please be reminded that what should be noticed in the raw stock is unripe cotton. The presence of unripe fibers lowers the grade of the cotton. The unripe fiber is very weak, and has very few, if any, convolutions, but is solid, smooth and cylindrical, and may be recognized by its glossy appearance. The ripe fiber, when seen under the microscope, has the appearance of a twisted ribbon with a corded edge. These convolutions are peculiar to cotton and are not present in any other fiber.

The twisting which the fibers receive in the process of spinning interlocks these convolutions and hence gives strength to the yarn.

So, it should be the chief aim in cotton manufacturing so to arrange the machines and their parts to hold the convolutions in the fibers. So, we come to the question, what destroys the convolutions in the fibers?

The answer is, exposing the fibers to a severe action of beating or combing, or by pulling the fibers beyond their strength, with excessive drafts. I would like to have the reader refer back to the November 1933 issue of COTTON. Here, on page 34, you will find such men as Marshall Dilling, John W. Long and Mr. Williams, all advocating light fast carding. I have followed these men for years, and when you speak of practical men, they are hard to beat.

Again, look back to the days of the railway head, when we ran slivers from 90 to 115 grains to the yard. Next, remember when it was common to find a 75-grain finished drawing sliver. I doubt very much whether you could find any up-to-date cotton mills today where the finished drawing sliver exceeds 60 grains to the yard.

Now, what is attenuation? It is to make a strand thinner and more slender. Then, if you have a 70-grain sliver at the card, and an 80-grain finished drawing sliver, you are not following the law of attenuation.

The following test can easily be made. Make your finished drawing sliver 80 grains to the yard, and draft it down to 30s yarn. Next, make a 50-grain sliver and draft it down to 30s, and then examine the two yarns, and you will find the yarn from the 80-grain sliver full of thick and thin places.

In taking charge of a card room in the state of Massachusetts—the state where I was born—I immediately made the following changes, due to the strike by the mule spinners, and due to the thick and thin places that could be seen with the naked eye.

Before I made the change, the front rolls on the drawing frames were making 250 r.p.m. The weight of the sliver was 80 grains to the yard. I reduced the sliver to 50 grains to the yard, and increased the speed of the front rolls from 250 to 400 r.p.m. All the mule spinners were pleased, and the trouble was over.

With the foregoing in mind, the inquirer can see that the right kind of stock and the ability to judge the raw stock, is an important factor. I can best answer the two questions in a concrete way:

For the manufacture of 24s to 30s, I found the Gulf cotton most satisfactory. Gulf cotton or New Orleans, as it is sometimes called, is raised in the Mississippi River basin, in Louisiana, Mississippi, and part of Arkansas. It is the best of strictly American cottons.

You must make an allowance of ⅛-inch over the proper setting between the first and second rolls on the drawing, owing to the high speed of the front roll.

# TO CLEARACOTS

● In the illustration, notice the amount of collected waste, and the way it is anchored deep in the dense wool fibres of the Clearacot.

● Because Clearacot fibres are firmly imbedded in their own leather base, and because they are grown so closely together that they support each other, they stand erect, and work like a brush on the rolls. Therefore they do a better clearing job than any cloth clearer; at the same time their density means that they hold the accumulating waste more tenaciously. ● From this latter fact, several advantages result. There is less frequent need for the picking operation. There are fewer nips and slugs. The rolls are clearer. The yarn is better. ● And all these advantages are permanent because Clearacots never mat down, and work as efficiently when old as when new. ● Give them a test at our expense. Send us one of your present clearers for size, and we will send you samples of Clearacots, free.

## A. C. LAWRENCE LEATHER CO.

PEABODY, MASS. GREENVILLE, S. C.

It can be deduced from the above that the organization will prove satisfactory for the numbers of yarns given in the second question.

In conclusion, I assure this inquirer that he need not fear of making the changes. Since the year 1906. I have always run a 50-grain finished sliver with a front roll speed of 425 r.p.m. for metallic rolls. If you are running leather or cork rolls, and you find they jump at a speed of 400 r.p.m., write and I will give the remedy.

WASH (R. I.)

## Mayflies Invade South Carolina Mill

EDITOR COTTON:

We are all familiar with the yarns told by old-timers about the unusual things that they have experienced in days gone by, but let's see who among them can equal the extraordinary experience that occurred recently at the Monarch Mills at Lockhart, S. C.

Doubtless you have read in papers how locusts, grasshoppers, and other insects have collected in certain sections of the country to stop athletic contests, traffic, and other activities, but who has ever known of a mill having been forced to close down on account of insects? That is what actually happened at the Lockhart plant on one night last July. About 9:30 o'clock in the evening swarms of May flies began to pour through the open windows of every room in the mill. Before the windows could be closed every department was filled with these insects, and every light in the mill had a cloud of these flies flying around it. In certain rooms the white walls had been turned into a mass of gray living bodies.

After a few minutes of circling around, the visitors started to make an inspection of the work. Some of them lit on roving in the creels and took a merry-go-round ride. These were eventually carried "for a ride" into the drafting rollers where they were crushed. Whenever one of them met such a fate, a lap up occurred either around the leather or around the steel roll, necessitating the stopping of all frames. The slashers had to be stopped at once as the May flies had become trapped in the threads and were being wound on the beams. The weave room fared no better. Hundreds of the flies became lost in the threads and harness which caused innumerable tangled threads and break-outs.

As soon as possible, all entrances and windows in the mill were closed to prevent other flies from entering. Now, the enormous task of destroying those inside the mill was encountered. To cope with this situation, the superintendent of the plant decided to turn all of his humidifiers into huge spray guns. In the humidifier tanks he mixed certain chemicals deadly to all insects. By this maneuver, every cubic foot of air was laden with the insecticide which soon began to have its effect on the May flies. Soon after they began to breathe the poisonous air they began to circle to the floor in thousands, never to get up again. Within an hour after the humidifiers began spraying out the insecticide there was not a live insect left. The next morning the dead bodies were removed from the stock and machines by a low pressure blow pipe. Every alley and all spare floor contained huge piles of dead bodies of these unwelcome visitors.

Around the mill there were millions of dead bodies where the May flies had killed themselves by flying into the closed windows. To give an idea of the magnitude of the swarm, 50 pounds of dead insects were collected from the sills of three windows. An electric light pole that happened to be in the path of the swarm was a great attraction. So many insects lit on this pole that it could not be recognized as such, but had the appearance of a shaft of living bodies.

It might be interesting to the readers of COTTON to acquaint themselves with some of the biological characteristics of these insects. They are entirely harmless to persons in all stages of life, they do not bite, pierce nor sting, and do no harm to crops or animals, even though heavy flights of the adults may be a nuisance for a day or two. In towns on the Great Lakes they sometimes accumulate at street lights in such numbers as to dim them, make streets and pavements slippery, in such masses that their decaying bodies produce a stench and are swept up by the street cleaners by the ton.

May flies develop in water. The adult winged flying insects lay their eggs on or in water of ponds or streams. These eggs hatch to a "nymph" or "larva" which lives at the bottom, being then wingless, of course, but with six legs and small bushy gill-tufts along the sides of the body. In this stage it lives for one to three years, feeding on soft and decomposing vegetation. Whereas most young insects shed the skin four to six times during their growth, some species are known to shed as many as 16 to 19 times. When about to acquire wings, the creature crawls out of the water to shed and emerges with wings—and here is another peculiarity that after it has wings and flies, it then sheds its skin once more, whereas we do not know of any other insects which shed after they can fly. Thus one of their special peculiarities is the exceptional number of times that they shed their outer skin.

The adult winged May flies are frail, the four wings are thickly netted with veins and the front wings are much larger than the hind ones. These flying adults take no food, and are very short-lived, their only function being to mate and lay eggs for another generation. Both the adults and the young, however, are of some beneficial importance as a prominent item in the food of fishes.

As compared with other insects, the length of young, developing life is relatively long, and the length of adult life is very short. There appears to be a remarkable timing in their development, countless numbers of one species developing to the winged stage at the same time, hence the swarms or flights of them which may be conspicuous for one or two nights and then not noticeable again until the next year or so.

ROBERT T. STUTTS.

*Experience*

and

*Devotion to one purpose*

supplemented by

*The most up-to-date processes*

are combined in the making of

our

# ROLLER LEATHER

FOR over one hundred years we have tanned and finished our roller leather in one tannery devoted to no other purpose than to make the *best possible product.*

**Full Hemlock Bark Tanned Sheep and Lamb Rollers**

**Full Hemlock Bark Tanned Calf**

**Full Chrome Calf**

For these reasons our leathers are pronounced

*The Standard*

158 years of leather making
is your guarantee of reliability.

## WINSLOW BROS. & SMITH CO.

NORWOOD, MASS.

# Points on Loom Fixing (Part 5), by Ivar Moberg

*(This is the fifth in a practical series of articles on loom fixing, by Mr. Moberg. The first installment appeared on page 87 of the June issue, Part 2 was published on page 71 of the July issue, Part 3 on page 69 of the August issue, and Part 4 on page 73 of the September issue. . . In those installments, the subjects of mis-picks, broken picks, double picks, filling kinks, kinky warps, creepers, pull-ins, skips, reediness, shuttle marks, and uneven weaving were discussed.—* THE EDITOR.)

EDITOR COTTON:

### Thick Places

This defect is somewhat similar to uneven weaving but differs by giving a higher pickage than that for which the loom is set. There are several causes of thick places, such as broken or rough friction drums, chain catching on the beam flange, cloth slipping on the take-up roll, take-up gears not properly meshed causing them to slip over teeth, take-up and hold-back pawls so badly worn that they slip, broken or worn teeth in the take-up combination and the pawls set too close to the teeth.

If the loom has worm gear take-up, the teeth in the clutch may be so badly worn that the clutch opens up under the strain. To test the gears for slipping, after first having made sure that the gears are properly meshed and no teeth are broken, we re-start the loom, and take hold of the ratchet gear—or, if the loom has worm gear take-up, of the intermediate gear—and attempt to prevent it from moving. In doing this, the added resistance will force a greater torsion on the take-up combination, and if this does not function properly, one of the pawls will fail to take the teeth, and if the combination is of the worm gear type, the clutch will open up and slip. In a ratchet gear take-up we adjust the hold-back pawl so it will drop down in the teeth as the take-up pawl has completed its stroke. It may be necessary to give the take-up pawl added movement. If it is a worm take-up we replace the worn clutch, or, if we know how, we can file the worn teeth in the clutch so they will take hold again.

### Thin Places

This is another defect similar to uneven weaving, but differs by giving a lower pickage than that for which the loom is set. To remedy thin places we first examine the let-off to see that it is functioning properly and that the friction drums are smooth and unbroken. If the transfer mechanism is not set properly, so that it will transfer bobbins gently and almost without sound, there is likely to occur a jar of the loom at the transfer of the bobbins, and this will sometimes make the warp beam jump ahead. If there is play in the crank arms, the transfer of the bobbins, or variation of the speed of the loom will hold the lay back, that is, the lay is prevented from using the full force of its momentum, and a thin place in the cloth will result. It is very important that the crank arms be drawn up tightly at all times.

### Temple Marks

The defect of temple marks is recognized by dislocated, cut or scratched up warp and filling threads. On open mesh or flimsy fabric this defect is sometimes very persistent, as there is a greater contraction, and the warp and filling threads are easily dislocated.

In certain cases we can overcome this defect by using spiraled rubber burrs in the temple, but these wear out quickly and also are very uncertain in their action. Some of us overcome this defect by covering the burrs with adhesive tape and thus shorten the penetration length of the burr needles. If there is a strong, heavy selvage on the fabric, better results will be obtained by grinding off the needles of the burrs so there will be left only enough needles to grip the selvage. The grinding off of the needles is easily done on a fine grinding wheel upon which the burrs are held at an angle after first being placed on a spindle in such a way that they are permitted to revolve as they come into contact with the grinding wheel. The inner end of the burrs should always be rounded off so there will be no sharp edges to dig into the cloth.

If the temples are not set parallel to the reed or the needles of the burrs are bent or broken, temple marks are likely to occur. If the temples are set too far back from the fell of the cloth or if the cloth is running too tight, temple marks will occur.

There should not be any drop of the cloth from the temples toward the center, and if there is and the temples cannot be lowered any more, we must raise the take-up roll to eliminate the drop. If we raise the take-up roll it may be necessary to lower the harnesses and the drop wire banks to maintain the proper warp line.

If we are using selvage temples, we set this as close as possible to the reed without striking it. It is obvious that we should use right-hand burrs in right-hand temples and left-hand burrs in left-hand temples. We must keep in mind that a right-hand burr in a temple where the cloth goes over the burr becomes a left-hand burr in a temple where the cloth goes under the burr.

If we are using reciprocating temples, we must see that they move freely and follow the lay back to their normal position. The sliding parts in these temples should be lubricated now and then.

### Button Holes in Selvage

This defect is recognized by a broken or cut pick close to the selvage. It is often encountered in fabrics with great contraction of a heavy beat-up of a fine filling. To overcome this defect it is essential that the proper temples that will hold the fabric to the reed width must be used. If the selvage is overcrowded and too heavy, the filling may be cut as it is forced

# RAPIDASE

## CUTS REHANDLING COSTS

DYEING
BLEACHING
FINISHING

The cost of using RAPIDASE is so low that the bleacher and dyer cannot afford to take chances in the preparation of cotton, rayon and mixed goods.

It is wiser to desize gray goods properly than to risk rehandling.

THE ENZYMATIC *All-purpose* DE-SIZING AGENT!

WALLERSTEIN CO.
INCORPORATED
171 MADISON AVENUE
NEW YORK CITY

in by the reed. In this case, a selvage weave with less interlacings will often remedy the fault. However, when the defect occurs farther in from the selvage on the body weave, it is more difficult to deal with. In this case we must see that we have the least possible tension on the filling, and it is sometimes necessary to use shorter bobbins to lessen the drag from an almost empty bobbin. The longer bobbin we use, the more drag we put on the filling when the bobbin is woven low. Bobbins with a taper and a smooth round tip will also help greatly in overcoming this defect. The rings must be straight on the bobbin and the heel spring of the shuttle must hold the bobbin firmly and in the correct position.

A late timing of the shed is necessary, for with this the filling will not make so much of a pull-in as it is looped over a tight thread from an open shed when the shuttle comes to rest in the box.

We must also see that we do not have too much or too little tension on the warp. If the beam heads do not run true in the slashing, the selvage will build up low in one place and high on the opposite side. In weaving, such a selvage cannot be given the proper tension as it will run tight and loose on the alternate halves of the circumference of the beam. Sometimes the selvage is built up too high all around and such a selvage will run too loose to give proper resistance to the filling pull. We must not permit the filling to pull the selvage in excessively, if we wish to avoid this defect.

There have been developed at least two types of filling holding devices which can be used to great advantage in overcoming buttonholes in the selvage. One of these devices is attached on the top of the temple and the other on the side. Both of them have needles that descend over the filling as the reed starts on its backward movement; the filling loops around these needles instead of around the selvage threads, which, of course, will relieve the latter of all pull from the filling. As the reed beats up the filling, the needles are withdrawn and the filling is free to give additional length. The needles can be set so that filling loops are formed on the selvage or closer in, so that a perfect selvage will result.

### Loopy Selvages

The character of this defect is a series of loops in the filling outside the selvage. There are several causes for this defect, such as insufficient tension of the filling in the shuttle, narrow cloth on a wide loom, filling catching in the shuttle box or rough race-board.

An early shedding in conjunction with a weak pick will frequently cause loopy selvage, as the shed closes over the filling before it is fully pulled in by the shuttle. If the shed is too small, it has a tendency to prevent the filling from being pulled in by the shuttle. If the thread groove in the shuttle is worn too shallow, the filling may be pinched between the shuttle and the box front, and the filling is apt to run out from the shuttle, before the slackness of the filling is taken up. Filling catching in the cut-out for the filling fork in the lay, or the filling grate, is also often the cause of this defect.

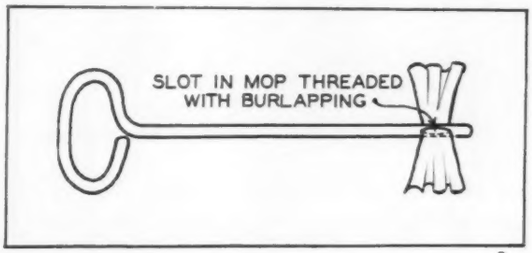
**(This concludes the fifth article in a series on the subject of loom fixing by Mr. Moberg. The next installment will appear in an early issue.—The Editor.)**

## "T. R." Gives a Simple Method of Cleaning Fly Frame Bolsters

EDITOR COTTON:

Necessity is the mother of invention, says the old adage, and necessity knows no law, which accounts for the fact that we sometimes have things thrust upon us where otherwise we would not have accomplished them. It is because I believe I have the best remedy available for cleaning fly frame bolsters that I am passing it along to the readers of the "HOW OTHER MEN MANAGE" department. Then if someone has a better idea I would be glad to see it published in this section.

Just recently I have had the pleasure of seeing all of my fly frames overhauled, and I am very pleased with the results, especially with the way the spindle bolsters were polished inside from top to bottom. Heretofore it has been quite a problem for me to get the bolsters as clean as desired, due to the additional time required for completing the finishing touch. Those familiar with fly frames know that there is a bearing surface of only about 1½-inch at the top of the spindle bolster, the remaining inside diameter being much larger toward the base, which makes it difficult to clean the bolster from the top side of the carriage, especially when the bolsters are




caked inside with oil and dust. Where it formerly required an hour and a half to clean a frame of bolsters of 144 spindles with two helpers, we can now accomplish the same feat in less than half that time. Here is the way it is done:

First run the carriage to the extreme top change and then have a piece of bar iron handy, say about 10 or 15 inches long, ¾-inch wide and ⅛-inch thick, with square edges—but of course the size of the iron will depend on the size of bolster being used. Insert this iron in at the bottom side of the bolster and make certain that it is twisted around as it is pulled out so as to cut loose all of the heavy impurities clinging to the inside of the bolster. It will be necessary, of course, to have a hand-hold on this bar iron, which can be made by simply cutting the iron three or four inches longer than the bolster, and by bending it out at the bottom to the desired angle.

I hope someone will try this and let us know the results.

Now for the finishing touch: For best results we use a piece of burlap in the slot on the mop, as the bolsters are polished from the top side with this arrangement. See sketch.

T. R. (N. C.)

YOU are assured the highest *quality* and *uniformity* by specifying ATLANTA for harness, reeds, frames and heddles.

ATLANTA HARNESS & REED MANUFACTURING CO.
P. O. Box 1375 Main 0517
Atlanta, Georgia

We can't truthfully say that it is "the best" mill white in the world—for the world is a big place.

However, it *is* fully the equal if not superior to the mill white claimed to be "the best" — and it costs you less.

Many of the largest mills in the South know this and get quality without paying a premium for it.

We will gladly send you full information, samples and prices. It will pay you to investigate

GILMAN'S
GLOSS MILL WHITE

•

Gilman Paint & Varnish Company
Chattanooga, Tenn.
*Paint and Varnish Makers for nearly a quarter of a century*

## Bottom Clearers on Fly Frames

EDITOR COTTON:

I see on page 109 of the February issue of COTTON that "J. R. (GA.)" has brought up the very interesting question as to whether or not bottom clearers on fly frames are essential or beneficial. Having had experience with clearers of this type, I will briefly give my ideas on this subject.

About 40 to 50 per cent of the cotton fibers in roving are not standard or the length of staple to which the rolls on the frames are set to draft. These shorter fibers fall between the rolls, but if bottom clearers are used, they of course catch all of these short and broken fibers, and unless the frame tender cleans the clearers thoroughly at each doff, the clearer waste will extend up between the steel rolls far enough to be picked up by the strand of roving, and the results are that you will have clearer waste or slugs in the work, which of course will be thick places in the roving or yarn after being drafted by the rolls.

I would be very glad to hear from others on this subject.

S. M. C. (S. C.)

## A Practical Man's Views on the Textile Graduate

EDITOR COTTON:

I have noticed quite a bit of discussion in this section, from time to time, regarding the textile graduate. I will not waste a lot of space giving quotations from the articles by these various writers, neither do I intend to weary your readers with a long write-up, but I would like to present a few random thoughts on this subject.

In the first place, let us take a sensible view of the situation from every angle. If a young man is planning a legal career he spends several years, and quite a bit of money, in preparing himself to that end; he studies in the best schools and colleges that he can afford to attend; he purchases all of the law books that he is able to buy, and reads them. He usually attaches himself to a firm of successful lawyers and studies under them before he feels that he is well enough equipped to hang out his shingle. Likewise, the young man who aspires to the medical profession, must spend a great deal of money and time in preparation for his calling.

If a young man wishes to become a successful textile executive why shouldn't he, also, have the benefit of all the technical training that he can afford? Then, after he has spent years in preparation, why shouldn't he have the opportunity of "practicing" his profession?

From this introduction one might form the opinion that I am prejudiced against the "practical man" in favor of the textile graduate, but the truth is, I am not. I am in deep sympathy with the practical man and would like to see him *prepare* himself for advancement, and then I should like to see him advanced in proportion to his ability. Frankly, in my


POWERS

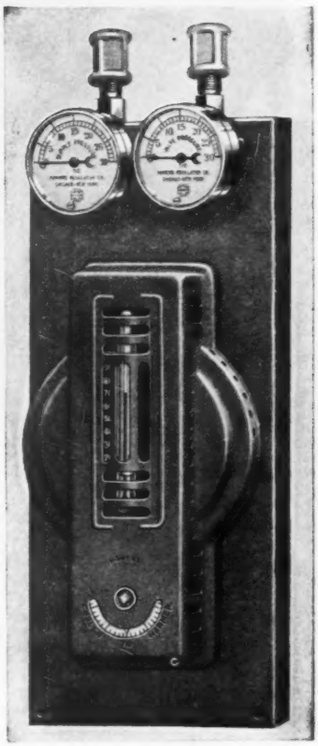
Room Temperature Control

1 Reduces Heating Costs 15 to 40%

2 Helps to End Stops and Delays in starting looms, spinning frames, knitting and finishing machines

3 Improves Quality of Product

4 Increases Output of workers and machines



● If room temperatures in your mill are "controlled" by hand or by worn-out obsolete controls don't be surprised if you find temperature fluctuations of 5 to 15° F. above or below the proper point. By stabalizing room temperature in each department POWERS *automatic* control will immediately help you to gain the valuable advantages listed above. May we submit an estimate? There's no obligation.

THE POWERS REGULATOR COMPANY

*40 Years of Specialization in Temperature Control*

OFFICES IN 43 CITIES

CHICAGO, 2739 Greenview Ave. NEW YORK CITY, 231 East 46th St.
ATLANTA, 306 Bona Allen Bldg. BOSTON, 125 St. Botolph St.
HIGH POINT, Box 264 PHILADELPHIA, Hardt Bldg.
BIRMINGHAM, Homewood Stat., Box 27 READING, 1121 No. 11th St.

Quickly Pays Back Its Cost

*We can never afford to cheapen its quality.*

IF you are seeking a dependable roller covering that will eliminate the many bothersome spinning troubles we sincerely recommend that you buy "Gilleather".

GILL LEATHER CO.

Salem, Massachusetts

*Southern Representatives:*

Gastonia, N. C.....W. G. Hamner
Greenville, S. C.....Ralph Gossett
Griffin, Ga.....Belton C. Plowden
Greenville, S. C.....W. J. Moore
Dallas, Texas, Russell A. Singleton

GILL SHEEP *and* CALF SKIN LEATHER *for* TOP ROLLS


# The Story of Cotton

*This is the fourteenth of a series of advertisements telling the story of cotton from its earliest cultivation in India and Peru to present times.*

## XIV. The Development of the Gin

For many years after Whitney's invention of the cotton gin, improvements in ginning machinery were few and far between; and indeed, even today, Whitney's fundamental principles are still used. During the period prior to the War between the States, there was small necessity for changing the equipment; cotton was carefully picked by hand, ginning was slow, and each plantation owned and operated its own plant—public gins were the exception, not the rule. Power for the gin proper was secured by wood-burning boilers; power for the press by means of a cumbersome screw operated by a mule.

The break-up of the plantation system after the War and the settlement by cotton farmers of smaller holdings in the West tended to eliminate the plantation gin and to establish an independent ginning industry as it exists today. Competition between "public gins" was keen, and this served to quicken the development of machinery and to speed up the ginning process.

The modern ginner represents an industry of no mean proportions. His plant, particularly in the West, may show an investment running well into five figures; its equipment includes not only gin stands but cleaners, hullers, driers, and other machinery made necessary by existing conditions. The power is derived from steam, Diesel and gas engines or electricity. Nearly every community in the cotton belt supports two or more of these efficient units; and in the ginning season, their "yards" are centers of the community's activity.

Gradually the gin is coming to be looked on as the first step in the manufacture of raw cotton into cloth. A few years ago the federal government established an experimental gin at Stoneville, Mississippi, which has already demonstrated its value to both ginners and manufacturers of cotton. The cooperation which ginners are giving to this important work speaks well for the future development of the ginning industry along lines which will make it of still greater service to other branches of the cotton industry—the producer and the spinner.


ANDERSON, CLAYTON & CO.

HOUSTON, ATLANTA, NEW ORLEANS, BOSTON, LOS ANGELES, CHARLOTTE, LITTLE ROCK, DALLAS, NEW YORK, MOBILE, MEMPHIS, SAVANNAH

opinion, the textile graduate has brought upon himself much of the criticism that textile graduates, as a class, have received in recent years. I have observed some of these men myself. They come into the mill, frequently, by having a "pull" with some relative or friend among the officials. By their attitude they immediately become obnoxious to the practical men by advertising their importance. They seem to feel that they know it all and parade this fact on every occasion. They are not content to come into the mill, take a regular job and thus demonstrate their ability, but must have some special job such as running tests, keeping extra records or something of this sort.

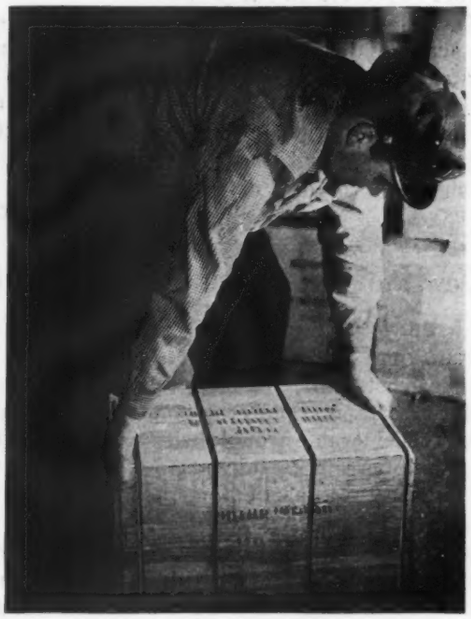
Naturally the practical man, who has spent years working hard, going to night school, etc., resents seeing these fellows going on jobs specially made for them until some opening comes in the executive staff.

Again, the textile graduate is usually able to belong to the golf club, the civic clubs and social organizations to which the leading mill officials belong. He is thus able to make the personal contacts so essential if one is to get along in the business world, while the practical man usually cannot afford these advantages and in order to make the necessary contacts with the officials he must depend almost entirely on the ability to attract notice by his work. And, I do not want to be unfair, but I wonder how many overseers have claimed credit for something for which their ambitious second hand was responsible.

The practical man, as a rule, believes that to succeed he must stay on the job and work hard, but how disappointed he must be to see some fellow who never had a real job getting production, who stays dressed up quite a bit and hangs around the office, step into a good paying position ahead of him. We all know this happens, yet it is something that we can't discuss frankly.

I believe that a textile education is very desirable, but unfortunately it seems that many young men think that they can learn from books all that is necessary for them to know to be able to come into the mill and proceed to show the practically trained man how the mill ought to be run. But as you know, in the mill you are dealing with actual problems of production, waste, cost and quality; you are dealing with folks, the human equation, and it is here that practical experience becomes a valuable asset. Of course it goes without saying that in order to succeed in any line of endeavor, including textiles, one must have a certain amount of native ability and must be able to get along with his fellows. So, with these natural traits, the textile graduate, with practical experience, certainly has the advantage over the man equally endowed but without the training.

The practical man can acquire a certain amount of training if he will try. Many of the mills provide night schools to which he may go. Home study helps. Reading other men's experiences in the textile magazines is valuable. He should study himself, and as far as possible, get rid of any peculiarities that he may have, be sociable and friendly. Seek

When You Need
SPARE PARTS
and Need 'em in a Hurry

That's one of the countless times when Railway Express is right on the job to help you out, and rush them to you by fast passenger trains. In all principal cities and towns we call for the shipment and deliver it direct to your door, without extra charge, giving receipts at both ends of the trip to make certain that your order gets to you without any hitch.

Order your spare parts and replacements shipped by Railway Express because it offers you an up to the minute service of safety and efficiency that is bound to suit your convenience.

Express rates are low, doubly so when you consider what a dependable service we insure you. The next time you need spare parts, have them shipped by Railway Express.

*The best there is in transportation*

SERVING THE NATION FOR 95 YEARS

RAILWAY EXPRESS
AGENCY, Inc.

NATION-WIDE SERVICE

to make personal contacts with those who can help, without appearing to curry favor.

Then, maybe it isn't hoping too much to expect that some of these days our good overseers and superintendents will put the textile graduates on regular jobs and expect them to get production just as they expect the practical man to do. Then with the textile graduate and the practical man on an equal footing—may the best man win!

TEX (GA.)

## Dew-Point Control Prevents "Wetting Down" in Weave Room

EDITOR COTTON:

Like most mills, we have in our weave room a condition of spotty natural temperature which has caused considerable trouble with wetting down from the humidifiers in certain parts of the room where the temperature, particularly in the winter time, suddenly falls below that of the rest of the room, causing a "dew-point" condition in the atmosphere.

Without getting into the technicalities of the subject, I can illustrate this by describing a condition that will be readily understood: Picture a weave shed with one side exposed to the effects of the sun and the other subject to a cold, blustery west wind. Particularly on a winter day, the sun rays might warm most of the room, but certain areas would be subject to a cold wind which would lower the temperature in those areas, causing the air coming in close contact with the wall to be lowered in temperature, and thereby tending to approach the "dew-point" temperature.*

We encountered this condition in our weave room, which is equipped with spray type humidifiers. Our first attempt to solve the problem was to heat the water in the humidifier filter tank by hand control, but with the hand control the water would get too hot, and damage to the concrete filter tank was unavoidable.

We next installed a regulator on the filter tank, which so operated that we could set the regulator, which was in the steam line, to hold the temperature of the water in the tank to any desired degree. This was accomplished by having in the tank a thermostatic bulb which, when the temperature of the water went below the desired point, operated the regulator valve which introduced steam into the water until the temperature was brought to the desired point, and shut the steam supply off when that point was reached. We set this regulator to hold the temperature of the water at 80 degrees in the winter time, and we discontinued the use of steam altogether in summer. This method helped us some, but we were still bothered with wetting down in those particular spots in the weave room in both summer and winter.

You understand that an increase in the temperature of the water going into the room through the humidifiers aids in the absorption of the water sprayed by the air. However, fixing the temperature of the water at a certain point (80 degrees) which eliminated wetting down in an extreme condition, did not adjust the temperature to correspond to smaller changes in the air temperature in these weave room areas.

I might say here that throughout our entire mill, we regulate the room temperature by means of thermostat control. We put our humidity problem up to the engineers who had installed these thermostats, and they worked out for us a "dew-point" control which has apparently solved our problem. This control consists of a master thermostat which is located in the weave room at the point where we were bothered most with the wetting down. This master thermostat operated an air-controlled sub-master thermostat in the water supply line at the filter tank, connected to a steam valve which raises or lowers the temperature of the water to overcome the "dew-point" or wetting down condition.

So, if in this particular spot in the weave room, the air temperature should suddenly change toward a condition of "dew-point", this change of temperature would affect the master thermostat, which in turn would operate the sub-master thermostat which would operate the steam valve to raise the temperature of the humidifier water, and the relation of the water temperature to the air temperature would be immediately adjusted.

These thermostats are so adjusted that for a change of one degree of temperature at the master thermostat in the weave room, the temperature of the water is changed two degrees. This differential can be varied to suit local requirements.

It is understood that the additional heat supplied to the water is compensated for by the heat losses in the section of the room where the temperature has been lowered due to the outside changes in temperature.

This method of control has, as I said, eliminated our problem of wetting down in those areas of the weave room. I pass the experience along as of possible interest to other readers who might have had a similar problem and desire to correct it in this way.

CONTRIBUTOR NO. 6328.

*Dew-point temperature is that temperature of a water-vapor mixture which is a result of the temperature of the mixture being lowered to a point where saturation occurs and which further results in precipitation of the moisture in the mixture on surfaces cooler than the water-vapor mixture.—THE EDITOR.)

## An Old-Timer Says—

(Continued from page 97.)

Of course I am speaking of the majority—vast majority—there are some exceptions—if there were not some exceptions then there would not be any wealthy men.

You young men—you men under 40—make up your mind not to let all of the opportunities slip by you. Be conservative, of course. It is not necessary for a man to stake "his all" and either be a millionaire or go to the poor house. I do not advocate any such foolishness, but I do claim that many men under 40 can by simply profiting by other people's mistakes go a long ways forward in his particular sphere. In other words, $25,000 is a fortune to one man where it would

take $100,000 to be a fortune for a man in a different sphere.

(And, JIM, of course is fast asleep). Hey there! Will we ever learn?

*Learn what,* OLD-TIMER?

---

## Answers "Wash's" August Carding Questions

EDITOR COTTON:

On page 87 of the August 1934 issue of COTTON I notice that "A. T. G." and others are invited to try if possible to answer a list of questions submitted by our friend "WASH". I therefore wish to accept this invitation and do my humble best to give my answers to these questions.

The first question revives in some degree an old discussion, as it concerns the pressure of the presser pad of flyers on fly frames. It reads:

*"1. In the bobbin lead system, the pressure of the paddles on the bobbin is nearly sufficient to keep the spindles up to speed after the frame as a whole has been put up to speed, even though at that minute the train of gears driving the spindles from the jack shaft were disengaged. This was tried by one of the largest shops building fly frames and it was demonstrated to be so. Is this an advantage or a disadvantage of the bobbin lead system?*

It seems to me that "WASH", in the April 1926 issue of this journal, said that there was enough—mind you, enough—pressure at the point of the presser pad to revolve the spindles, and he also stated that same had been proved at that time. Now we are informed that the pressure of the paddle is nearly sufficient to keep the spindle up to speed. Anyway, granted that this condition really exists, I will say that it must be decidedly a disadvantage if the speed of the bobbin has to lend aid to the spindles because of this pressure, but I doubt that even such a condition does exist.

Naturally, if the speed of the bobbin, in addition to the pressure of the presser pad, gives aid to the revolving of the spindles, there is bound to be an undue strain exerted upon the roving passing through the flyer.

But, our friend "WASH" has also previously informed us that the pressure is a variable one, and is greatest at the beginning of the set. Therefore, I take it that if one of the train of spindle driving gears ceased to function through any reason at all, say at the beginning of the set, we would not have the discomfort of any end breakage. Marvelous! That seems quite feasible, does it not, according to the established theory. But on my humble recommendation please do not take it for granted. When anything interferes with the driving of spindles, as stated, those spindles stop. That is common sense, and no theory.

Question No. 2 asks, *"In the bobbin lead system, why is a special cone belt required?"*

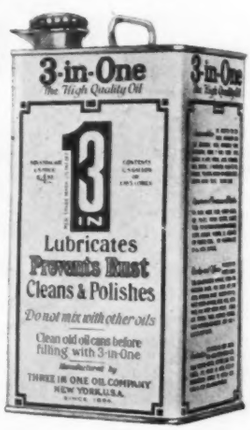
I have had to use ordinary single belting for quite a long time before any of the special belts were invented and introduced. Of course, I realize what our

WHAT'S IN IT?

Equipment gets TRIPLE protection when you oil-up with 3-IN-ONE

The protection that comes out of an oil can depends on the oil that goes into it. And many an oil will not give delicate equipment the complete protection which it should have.

Three-in-One Oil does a triple job. Lubricates with a light but strong and lasting oil film, and at the same time keeps working parts much cleaner and free of rust. Special blending of three oils guarantees this triple protection.




Three-in-One has long been a favorite oil in the textile industry. Write your supply house now for gallon-can prices.

THREE-IN-ONE OIL COMPANY
170 Varick St., New York

# PIONEER BRAND
## COTTON LOOM HARNESS

*Challenge Abuse*

This perfected harness is recommended for its ease on warp yarn and for the increased efficiency in weaving, reduction in seconds and better quality of fabric. It is made from Pioneer Harness Twine, manufactured in our own plant by the special Pioneer process.

# PIONEER REEDS

*Precise Degrees*

No better reeds can be obtained anywhere. They are built to insure long, satisfactory service and to reduce the expense of shuttle replacements. Made of the highest quality materials, smoothly and accurately finished to meet the most exacting requirements and specially adapted to "high-speed" looms.

REPRESENTATIVES OF OLD NATIONALLY KNOWN AND ADVERTISED MANUFACTURER OF

# STEEL HEDDLES

FRAMES AND ALL FRAME PARTS

## OUR LOCATION

and the large stocks always on hand ready for quick shipment, enable us to assure Southern mills of the utmost in prompt and satisfactory service.

FRANK G. NORTH
EMILE LECLAIR
WALTER W. GREER

FREDERICK M. SUCHKE
GLEE B. THOMPSON
MARK W. MAYES

HARNESS REEDS HEDDLES FRAMES

PIONEER ATLANTA CO. INC.
ATLANTA, GEORGIA

PHONE JACKSON 4294
POST OFFICE BOX 2165

289 SIMPSON ST., N. W.
ATLANTA, GA.

SUCCESSORS TO ANDREWS COMPANY, ATLANTA PLANT



# PROCTOR
# AIR-DRYER

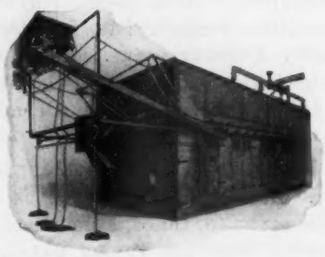
## THE WAY TO PRODUCE BETTER WARPS

There is a wonderful improvement in the drying treatment of cotton warps with the new Proctor Air-Dryer compared with the old can-drying, as well as older air-drying methods.

No shaded colors . . . no hard spots . . . no overdrying and no flattened threads. Proctor Air-Dryers furnish natural drying conditions, resulting in superior loftiness, elasticity, strength and uniformity of color.

There are two Proctor Air-Drying Systems for cotton warps and both reflect the superior experience of Proctor Dryer engineers.

One, designed especially for mercerized warps, takes the warps in sheet form direct from the mercerizing machine and dries them in continuously rolling festoons still in sheet form . . . dries them uniformly and efficiently without tension, flattening or baking.



The other type applies alike to dyed, bleached, sized, or mercerized warps and is also a continuous system in which the warps travel over driven rollers through efficiently circulated air.

There is a type of Proctor dryer for practically every textile drying need. Why not let Proctor's experienced engineers figure on your drying requirements? Full details on request.

**PROCTOR & SCHWARTZ, INC**
**PHILADELPHIA**

friend is driving at and he means to infer that we must have a special heavy belt in order to perform the heavy duty it is called upon to do when driving the bobbins, having no aid from any other source or mechanism. Certainly the newest type of belt is an improvement but certainly not a great necessity.

I know at the start of a set, when the belt has to accomplish the maximum amount of work, a single belt has a tendency to slip, but this is also true of a heavier belt if the surface of the belt is not in proper condition. However, I cannot agree with the claim that there is an absolute necessity of having a special belt, provided a good belting of the proper width is used in this drive.

Question No. 3: *"What is the proper speed for a doffer comb on a cotton card?"*

Let me state that this all depends upon the amount of carding being done, and the sole aim is to enable the comb to vibrate at enough speed, in order to comb off the web evenly from the doffer, not too tight nor too slack. The greater the speed or vibration, the more short material will be taken out. I have seen 1,100 r.p.m. and 1,800 r.p.m. of the comb pulley give good results, and this of course means that many double strokes per minute of the doffer comb in each instance.

Judging from his next question, that which "WASH" states must be an established fact, namely: Question No. 4, *"In sizing, why do we have a greater variation in the slubber strand than in the finished drawing strand?"* I presume "WASH" means drawing sliver.

Do we all have this experience? I wonder, but I am sure we do not. However, I think that our friend might have submitted the inquiry as follows: "Take three or four yards of finished drawing sliver which is of the correct size and pass same through a slubber, then size the resultant strand. You will find there is a variation. Why?"

Anyhow, if such an occurrence as he describes is common to "WASH", I may venture to state for one reason that we usually take more yardage in slubber roving sizing than we do for drawings, hence the variation if to any extent is more noticeable, but I think "WASH" has in mind other items, such as stretched roving, irregular twist, and variable condensing of the strands, as causes, which will tend to upset the sizing of twelve yards of roving.

Of course, according to "WASH'S" views, the bobbin lead system is to blame for all of this irregularity. That is all I have in mind at present, though it is possible that there is some other pet theory regarding this point and probably we shall hear about it later.

Question No. 5: *"The figured twist is never attained on fly frames. Why?"*

In answering, I will refer "WASH" to an article published in the August 1933 issue of COTTON, written by Fay H. Martin and entitled "Roving Frame Tensions—At the Start of the Empty Bobbin." In that article Mr. Martin, after giving the working of two calculations dealing with inches delivered by the front rolls, excess speeds of bobbins, etc., states, "The third calculation shows a slackness of 11.30 inches while the fourth calculation shows a slackness of 11.03 inches.


## Increase Your Profits!

### Reduce Oil Drip Damage Right Through the Mill

On every process, right through your mill the use of dripping, leaking oil causes waste and damage to cotton and cloth that reduces your profits.

Most leading mills use NON-FLUID OIL in all departments — from carding to weaving — because it saves them money.

Because NON-FLUID OIL does not drip or leak like oil, it stays in bearings until entirely consumed. Therefore it not only helps prevent oil spots, but lasts from 3 to 5 times longer—reducing both lubricant cost and cost of application.

*Write today for* ***free*** *testing sample and bulletin, "Lubrication of Textile Machinery."*

**New York & New Jersey Lubricant Co.**
**Main Office: 292 Madison Ave., New York, N. Y.**

Lewis W. Thomason, Charlotte, N. C.
Southern Agent

*Warehouses:*

| | | |
|---|---|---|
| Chicago, Ill. | Providence, R. I. | Atlanta, Ga. |
| St. Louis, Mo. | Detroit, Mich. | Greenville, S. C. |
| New Orleans, La. | Spartanburg, S. C. | Charlotte, N. C. |

TRADE MARK REGISTERED
NON-FLUID OIL
IN U.S. PAT OFFICE & FOREIGN COUNTRIES

MODERN TEXTILE LUBRICANT

*Better Lubrication at Less Cost per Month*

# Stop those delays that cost money-

Your employees need occasional refreshments, but too much strolling back and forth to drink stands amounts to quite an item in lost time and production.

You can stop those "delays" that cost money and at the same time give your employees cold drinks as well as hot lunches, with this cafeteria on wheels,—the

# WRIGHT

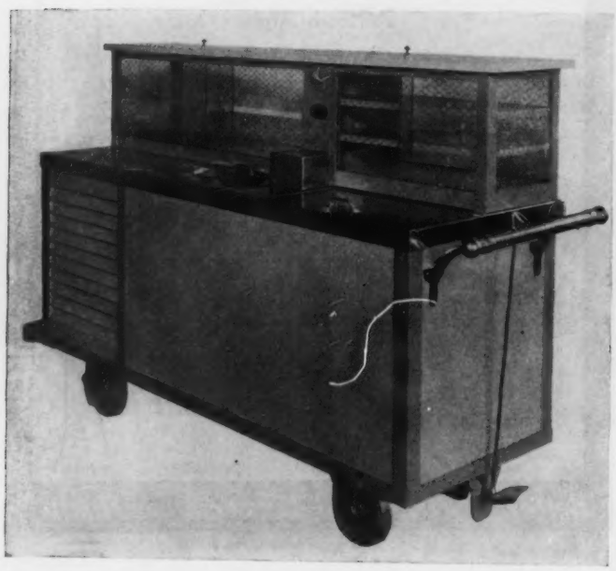
## COLD DRINK AND FOOD CART

which can be moved up and down the aisles of your mill, taking care of the needs of your employees and enabling them to refresh themselves without leaving their machines.

The cold section has a capacity of 400 bottles. The electrically heated section carries wieners, hamburgers and other hot sandwiches. An occasional plugging into the electric circuit between trips keeps the compartment hot. There's a shatter-proof glass enclosed compartment for pies, candies, gum, tobacco and other sundries.

The WRIGHT Cart is now in use in many of the South's leading mills saving time, retaining employee good will and refreshing their energy. For full information see your Coca-Cola bottler or write us direct.

WRIGHT CO., 84 LUCKIE ST., ATLANTA, GA.



Fair Profits — Rush Orders — Fair Wages

# CAN YOU Satisfy ALL OF THEM ?

Super-Critical Buyers — New Novelty Goods

One of the most effective and necessary helps in the satisfying of these legitimate demands is *correctly designed modern harness equipment.*

Worn out, incorrectly designed, or obsolete harness equipment will invariably cause delays, lost production, excessive "seconds" and limits the variety of production — all of which tends to cause dissatisfaction, curtailed profits, and employee discontent.

Prompt delivery of perfect merchandise these days is most essential. Place your orders with those who have the facilities for taking care of your orders. The Steel Heddle Mfg. Co. carry large stocks and have unlimited facilities.

Send your orders to us and avoid being disappointed.

## Steel Heddle Mfg. Co.

2100 W. Allegheny Ave.
PHILADELPHIA, PA.

| New England Office | Southern Plant | Foreign Offices |
|---|---|---|
| 44 Franklin St. | 621 E. McBee Ave. | Huddersfield, Eng. |
| Providence, R. I. | Greenville, S. C. | Shanghai, China |

QUALITY LOOM HARNESS EQUIPMENT

TRADE MARK

## Stehedco

HEDDLES · REEDS · FRAMES
HARNESS ACCESSORIES

By this time, the roving on the top part of the bobbin has gradually swelled and its diameter becomes larger. (We should not use the word 'swelled' but rather because of the slackness of the tension on the strand at this point, the figured twist has been retained, thereby increasing its diameter. This diameter is larger than a strand of roving that has been stretched which reduces its diameter, also its turns of twist per inch, which produces a weakened roving.) Because of this slackness the tension has become equalized to a certain extent."

In passing, please let me inform the reader that I was at one time accused by "WASH" of issuing many misleading statements. I wonder which of these two claims is correct. One must be misleading. Judge for yourself. How about it, "A. T. G."?

Anyhow, it seems to me that the figured twist is attained after four or five layers of roving have been laid upon the bobbin and lost on the previous layers, more so, when frames are started with a tight tension and beyond about half speed. Still judging from Mr. Martin's statement, it would seem that "WASH" is wrong about the figured twist never being attained.

Question No. 6: *"We run a fly frame to suit the intermediate speeds in order to keep the surface speed of the front roll and bobbin equal. What will destroy the intermediate speeds?"*

Here "WASH" makes an error. Does he know that the surface speed of the bobbins does not remain equal all through the set in order to accomplish winding-on, owing to the equal delivery of the rolls? The point to remember is, the surface speeds of bobbins calculated only from excess revolutions of bobbins must always remain equal. However, the question asks, "What will destroy the intermediate speeds?" Shall we say incorrect lateral movement of the cone belt, as the cones being considered as a series of separate pulleys, the diameters of same in the cone outline being considered separately for each separate layer of roving, the belt must be moved correctly to give correct tension for each layer.

Question No. 7: *"On all electric stop motion drawing frames, how close should the magnet be set to the hanging finger?"* On our electric stop motions, we have coils, not magnetos, and the fingers are set to the coil at about 3/16-inch.

Question No. 8: *"On a fly frame having 172 spindles, when the frame has run 840 yards or one hank, we have .20 pound on one spindle. What is the hank roving?"*

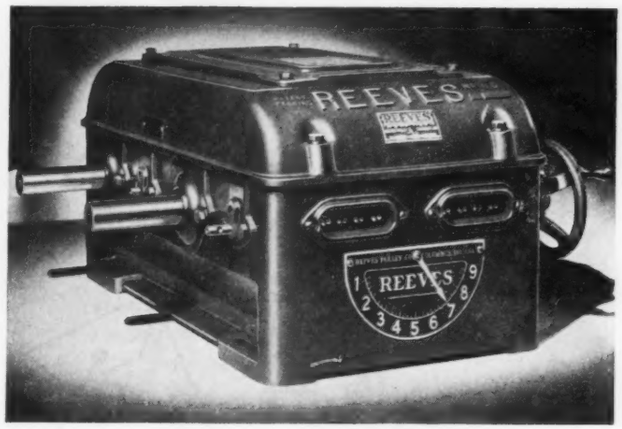
This question was submitted especially for "A. T. G." to see if he can figure card room production. However, suppose we say the answer is 5.00-hank, or to be correct, 4.99-hank—arrived at by dividing the dividend for 840 yards by the weight in grains. As old as the hills, I know, but it is there just the same.

Question No. 9: *"Does an efficient card grinder have to have keen hearing? Be careful when you answer this question."*

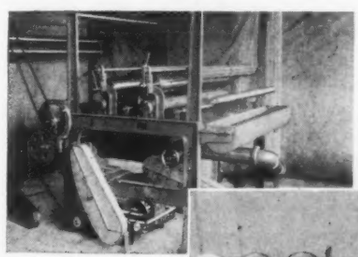
All right, I should say any efficient card grinder is better off with keen hearing but that is not his chief requirement. A card grinder must rely mostly upon his sense of touch and even that is not reliable, and his gauges and their correct use are his most val-


# PROVED

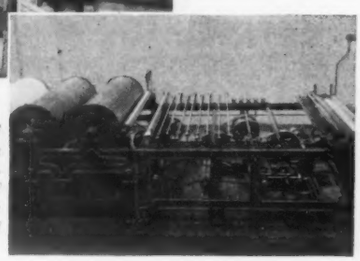
## SPEED CONTROL FOR TEXTILE MACHINES




Any textile machine equipped with a REEVES Variable Speed Transmission has PROVED speed control . . . *Time-tested* provision for fine gradations in speed over a wide range! *Time-tested* precision in speed selectivity while machines are running! *Time-tested* accuracy in maintaining any speed setting without fluctuation! . . . Let REEVES engineers outline the many advantages of this PROVED speed control for your machines. Our recommendations based on more than 35 years' experience in serving the textile industry. From no other source is it possible to obtain such seasoned experience in speed control engineering.



*REEVES-equipped Vacuum Extractor. Travel of fabric can be instantly changed to meet any requirements—from heavy overcoating to a tropical fabric.*



*REEVES-equipped Slasher. Various units can be perfectly synchronized, thus reducing end breakage and stretch that occur on the conventional Slasher.*

• SEND FOR THIS VALUABLE BOOK

REEVES PULLEY CO., COLUMBUS, IND.

Send information on modern speed control methods in textile plants, as contained in your 74-page catalog T-99.

(10-34)

*Name*.....

*Company*.....

*Address*.....

ATLANTA ENVELOPE COMPANY

505-7-9-11 Stewart Ave., S. W., Atlanta, Ga.

Please send me samples and quotations on the following envelopes. (Enclose sample of envelope you wish reproduced, if you prefer.)

Quantity Type of Envelope

NAME

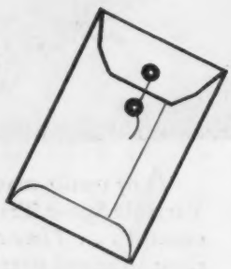
FIRM

ADDRESS

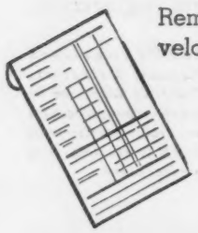
CITY STATE

# THIS COUPON
## May Save You Money!

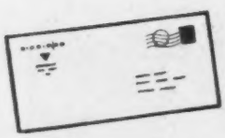
**It will take you but a moment to return the coupon above and returning it may point the way to savings in your envelope costs that will amount to a substantial figure in the course of a year.**

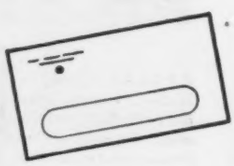


Our reply will not only supply you with prices, but if we are able to suggest small changes in your envelopes that will make them more economical, we'll be glad to do so.



Remember, we've been in the envelope business for over 41 years and have served mills all over the nation. We manufacture any type of commercial envelope a mill needs.





ATLANTA *Envelope* COMPANY

505-7-9-11 STEWART AVE., S. W.

ATLANTA, GA.

# How Kendall Mills Earned $1200 In Extra Profits

Kendall Mills, by replacing an old Double-Head Utsman machine with Type K, made a saving of $1200 the first year. This new, efficient unit does work which would require about 7 hand cleaners.

The cost of cleaning bobbins with the Utsman machine was $64 per week. The cost with Type K was $40, an annual saving of $1200, this being before the code and before the 8 important improvements, recently made, which give Type K even greater speed and accuracy.

Many mills are making even greater profits by installing Type K—now in use in 17 countries.

## 100 to 120 Bobbins a Minute

The 8 important improvements of the new Type K Bobbin Stripper give it an operating speed of from 100 to 120 bobbins per minute—*almost twice that of older models.* The new wide Stripper Blades, of extraordinary precision, prevent marking of bobbin barrels . . . and a more accurate Plunger Assembly eliminates splitting of barrels.

Write today, without obligation, asking that a Terrell representative estimate the savings you can earn by replacing old, less efficient machines with the new fast Type K, which generally pays for itself in a few months.

*The new bobbin blower attachment blows the slugs from bobbin bores. This may be applied to either new or old Type K Machines at slight additional cost. Ask your weaver what this means to you and then send for details.*

*the new* TYPE K *Bobbin Stripper*

## The Terrell Machine Co., Inc.

**1236 North Church Street**

**CHARLOTTE, NORTH CAROLINA**

MR. LUTHER PILLING, *Danielson, Connecticut, Representative for N. Y., N. J., Pa., New England States, and Canada*

GEO. THOMAS & CO., LTD., Manchester, England, *European Agents*

uable assets. I know grinders and others too who are almost deaf when out of the mill, but when inside they can hear as good as anybody else. But if "WASH" means to infer that a keen sense of hearing is an absolute essential to a grinder, he should forget it, because a good grinder will trust to his gauges rather than to his ears.

Question No. 10: *"What should be the proper speed of grinding rolls?"* Speed is of paramount importance in grinding cards and 600 to 750 r.p.m. for 7-inch diameter rolls is a good speed.

Question No. 11: *"With leather and cork rolls, the bite on the fibers is in the center. Can the same be said for metallic rolls? Why?"*

In answering this question I would advise "WASH" to take a sheet of paper and pass it with six slivers through the metallic rolls on a drawing frame, and he will see where the bite appears. Metallic rolls are positively driven like gears, and the flutes do not just mesh at the ends but all the full width of the rolls. The manufacturers of these rolls will inform you that the front rolls are set to mesh 3/64-inch deep and the two back rolls are set 1/16-inch deep. The collars determine the depth of setting.

Question No. 12: *"Some carders employ what I term a trick in giving speeder tenders extra hanks without being caught at it. How is this done?"* Truthfully I do not know because I have never employed such methods. That is monkey business and should not be tolerated.

Question No. 13: *"What type of flyer is best? Why?"* That all depends upon the outline of the cones being used. We all know that Dunn flyers call for straight outline cones in order to run them.

Question No. 14: *"Will the wrong setting of the twin gears on a fly frame that do not slip or come out of mesh cause running over or under?"* Certainly. They should mesh equally with the bevel not too deep or shallow, giving perfect freedom for equal changes of the builder.

Question No. 15: *"When changing from a certain hank roving to another, would you employ square root to find the twist, lay or rack gear?"* Yes, I would in each case, by multiplying the square root of the present hank by the gear and dividing by the square root of the hank required.

Question No. 16: *"Why is the strand of roving of a less diameter—or occupies less space—at the beginning of a set? Is the bobbin lead system to blame for such a condition?"*

According to "WASH" it must be, still, referring to an article by him a few years ago, I find that he claims that the first lap on the bobbins is not condensed but appears to be like a "ribbon". So it seems to me that a "ribbon" would occupy more space. So, may I ask what is responsible for that condition?

Question No. 17: *"What are the three chief causes of oil spots found in roving and yarn?"* I guess there are many causes for this trouble. Dirty boxes containing oily waste which may have dropped off of the bottoms of bobbins when being doffed, dirty bobbin gears being the cause. Careless help handling roving with oily hands is another cause. Too much oil used in oiling draw frame coilers. And in fact oily roving


POWERS

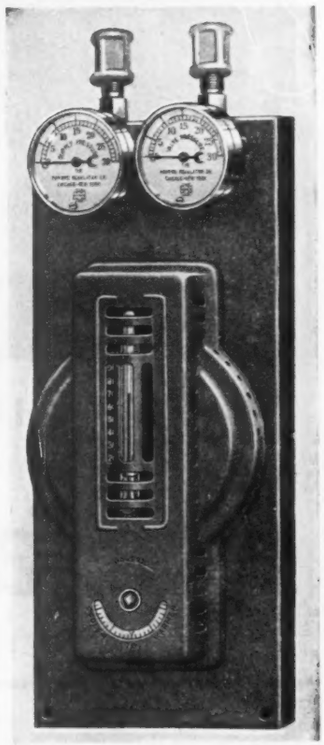
Room Temperature Control

1 Reduces Heating Costs 15 to 40%

2 Helps to End Stops and Delays in starting looms, spinning frames, knitting and finishing machines

3 Improves Quality of Product

4 Increases Output of workers and machines



● If room temperatures in your mill are "controlled" by hand or by worn-out obsolete controls don't be surprised if you find temperature fluctuations of 5 to 15° F. above or below the proper point. By stabalizing room temperature in each department POWERS *automatic* control will immediately help you to gain the valuable advantages listed above. May we submit an estimate? There's no obligation.

THE POWERS REGULATOR COMPANY

*40 Years of Specialization in Temperature Control*

OFFICES IN 43 CITIES

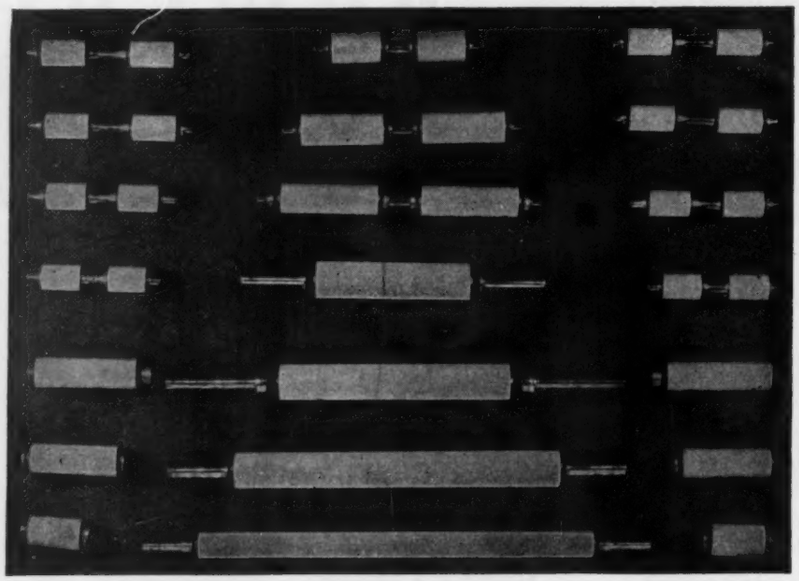
CHICAGO, 2739 Greenview Ave. NEW YORK CITY, 231 East 46th St.

ATLANTA, 306 Bona Allen Bldg. BOSTON, 125 St. Botolph St.

HIGH POINT, Box 264 PHILADELPHIA, Hardt Bldg.

BIRMINGHAM, Homewood Stat., Box 27 READING, 1121 No. 11th St.

Quickly Pays Back Its Cost



## Predominating!

Even felt cloths can stand out in their field, as is proven by the unanimous approval of "Philadelphia" throughout the textile industry.

*Roller Cloths* of the correct cushion and uniformity.

*Clearer Cloths* with thick strong nap that cannot pull out. Uniform length that clears rolls entirely of short fibre.

*Slasher Cloths* with enough cushion and porosity to thoroughly force sizing into yarn.

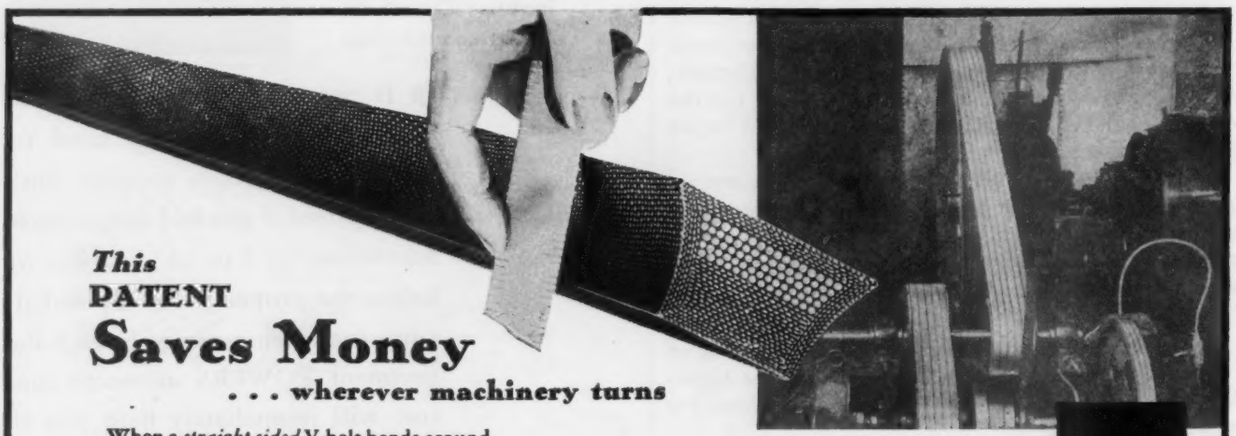
Philadelphia specializes in Stamping Blankets, Palmer and Sanforizing Blankets for Finishing, and Lapping Cloths for Printing.

Our Southern Sales Manager, Clarence B. Seal, will gladly assist you on felt cloth problems. Address inquiries to Philadelphia.

**PHILADELPHIA FELT COMPANY**
FRANKFORD, PHILADELPHIA, PA.

# Philadelphia *Felt Cloths*

**PROVEN IN SERVICE**



***This***
**PATENT**
## Saves Money
**. . . wherever machinery turns**

When a *straight-sided* V-belt bends around a pulley, three things are bound to happen. (1) The top of the belt, under tension, *narrows.* (2) The bottom, under compression, *widens.* (3) The sides of the belt *bulge out*—as shown in figure 1 (above).

Try to fit this bulging belt into the sheave groove and two facts become clear. (1) The belt will get excessive wear where it bulges *—shorter life!* (2) The whole side of the belt cannot uniformly grip the pulley *—a loss in drive efficiency.*

How different the V-belt with the precisely engineered *concave* side (a Gates Patent) the Gates Vulco Rope! As this belt bends it assumes a shape that *exactly fits* the sheave groove (Figure 2).

Two savings (1) The Gates Vulco Rope wears evenly *—longer life!* (2) Its entire side-wall grips the pulley—no slip*—full delivery of power!*

*Engineering service and stocks available in all large industrial centers*

**GATES VULCO ROPE DRIVES**

WRITE *the GATES RUBBER CO., Denver, Colo., for Valuable Book on Transmission—FREE*

or yarn will be caused by using too much oil on any of the machines used in the mill.

In conclusion, I am hoping that "A. T. G." has met the challenge from "WASH" and that we will see his answers to these questions soon.

D. E. (R. I.)

## High and Low Card Flats

EDITOR COTTON:

I am writing this letter in an effort to help the textile school graduates and learners in this industry.

What is the cause of high and low card flats? Since the early 80's, when the revolving flat card was first introduced, high and low flats have been an eyesore to the builders.

To begin with, perfect results cannot be accomplished in grinding the flats on any cotton card.

Another important point to consider is the process of hardening metal, which is never perfect, and for this reason, no two pieces of metal wear exactly alike. Therefore, the seatings of the flats do not wear alike, which is one of the chief reasons for low and high flats. The same can be said of the wire in the flats; they too are not all tempered the same. The beveled seatings of the flats wear by the incessant rubbing on the bends of the card.

In order to prove the foregoing, watch the flats where they come into contact with the bends on entering the card; and then again on leaving the card and over the sprocket wheels. After the card has run over a year, the seatings become rounded.

Now with the foregoing in mind, and considering that the flats should possess and retain as nearly as practicable the same degree of bevel, which as a rule is 3/100 of an inch, is it any wonder that on most cards it becomes impossible to produce a perfect web?

Again, please be reminded that when the card is set, the setting must be done at every high flat. Therefore, it is certain that the theoretical carding capacity of the flat is lost down to 30 to 50 per cent.

Another point to notice is that when grinding the flats, they are presented to the long grinding roll in a position opposite to that when carding, and you have a different seating, which helps to destroy the 3/100-inch bevel that should exist at all times from the toe to the heel of the flat.

Do not let anyone fool you by trying to lay the trouble of high and low flats to the wearing of the chains, for the wear in the chains will of course throw the flats slightly out of alignment but will not affect the bevel.

There is only one remedy and that is to have an automatic grinding machine which should be in every cotton mill and the flats ground at least every 18 months.

So far as I know, to this date, no textile school has dwelt on this subject, which to my mind is a very important one. Again, I often wonder why this important question is never discussed among mill men at their meetings. All cotton mills should have at least one automatic flat grinding machine which


SECURITY...
SERVICE...SAVINGS

Textile manufacturers expect financial strength, helpful service and savings in the company that carries their workmen's compensation and other liability insurance . . . American Mutual, strongest and oldest mutual casualty company, is one of the largest writers of liability insurance in The South . . . Dividends of 20% or more, returned to policyholders annually for nearly 50 years, have meant substantial savings to them.

AMERICAN MUTUAL LIABILITY INSURANCE CO.
*Workmen's Compensation and Automobile Insurance*
As of December 31, 1933
As Filed with New York Insurance Department

Assets: $17,292,237.06 Liabilities: $13,586,305.48
Surplus to Policyholders: $3,705,931.58

EXECUTIVE OFFICES:
142 Berkeley St., Boston, Mass.

Atlanta, Ga. Birmingham, Ala. Charlotte, N. C.
Chattanooga, Tenn. Greensboro, N. C. Greenville, S. C.
Knoxville, Tenn. Memphis, Tenn. Nashville, Tenn.
New Orleans, La.

Chafeless STEEL HEDDLES
Chafeless MAIL
Chafeless CORD

"EMMONS Makes ALL 3"

Not only do we make Cotton, Steel Heddles and Mail Eye Harness—we make all 3 *Chafeless*. Hence the names Chafeless Cord, Chafeless Steel Heddles and Chafeless Mail.

There is a type of Emmons *Chafeless* Harness for any weave you run.

EMMONS
Loom Harness Co.
• ESTABLISHED 1867 •
LAWRENCE, MASSACHUSETTS.

# AKRON LEATHER BELTING

Specially fitted for all mill drives. It produces results and it is **RESULTS** you are looking for.

THE AKRON BELTING CO. CASCADE AKRON, OHIO, U.S.A.

*FULL STRENGTH*

THE AKRON BELTING CO. SPIN-TWIST AKRON, OHIO

*FULL THICKNESS*

**SPIN TWIST = Full Speed---all day, every day on spinning frames and twisters.**

"NORKA"

**CASCADE Loom Belt = more picks per minute--- no break downs.**

THE AKRON BELTING CO. ESTABLISHED "AKRON" 1885 AKRON, OHIO, U.S.A.

THE AKRON BELTING COMPANY, AKRON, O., U. S. A.

*Makers of Quality Belting since 1885*

# SEYDEL-WOOLLEY CO.

SIZING — FINISHING

WARP SIZING SPECIALISTS

SEYCO

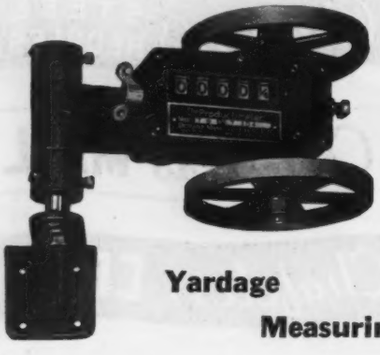
SCIENTIFICALLY PREPARED TEXTILE CHEMICALS

SEYCO

A CONCERN IS KNOWN BY THE CUSTOMERS IT KEEPS -

FINISHING — SIZING

ATLANTA, GA.



**Yardage Measuring**

The *New Productimeter Yardage Counter*, Model 4-T-9, is a high speed, full ball bearing counter built for hard service.

It records in eighths of yards and is equipped with two rubber rim aluminum measuring wheels for greater accuracy.

Free trial is offered for 30 days.

We also make loom pick and many other types of counters used in textile mills and finishing plants. Tell us your requirements.

DURANT MFG. CO.

Eastern Office
181 Eddy St.
Providence, R. I.

Western Office
1922 N. Buffum St.
Milwaukee, Wis.

# KENWOOD

KENWOOD WOOL PRODUCTS REG. U.S. PAT. OFF.

*Tanned*

Sanforizing Blankets

Palmer Blankets

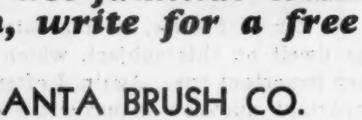
F. C. HUYCK & SONS

KENWOOD MILLS

Albany, N. Y.

NRA MEMBER U.S. WE DO OUR PART

The most popular brush in the textile mills today



No. 163 COMBER

***If you are not familiar with this brush, write for a free sample.***

NRA MEMBER U.S. WE DO OUR PART

ATLANTA BRUSH CO.

*Manufacturers -- Designers -- Repairers*

ATLANTA, GA.

in turn would save much good fiber, produce a better web and retain the flat bevel, and every flat would do 100 per cent of work instead of only 30 to 50 per cent as is now done in mills where cards have run over a year.

I hope that all textile school graduates will now understand that "WASH" in this article has done his best to point out the causes of high and low flats.

WASH (R. I.)

## A Correction and an Apology

It has just come to our attention that in a letter published in this department on page 77 of the August 1934 issue, by "D. E. (R. I.)" a sketch was used which obviously was taken without change from "Card Grinding in Theory and Practice", published by Dronsfield Brothers, Ltd., textile machinery specialists, Oldham, England.

The author in submitting this sketch with the article gave no indication that it was not entirely original, and it was accepted in good faith.

Furthermore, a casual comparison of much of the article with certain sections of the Dronsfield treatise mentioned make it clearly apparent that a great deal of the material in "D. E.'s" letter is essentially a copy of matter published in the treatise, though the wording was somewhat changed so that the similarity was not apparent at the time of editing the manuscript.

We offer an apology to Dronsfield Brothers, Ltd., for this unwitting reproduction of their sketch without due credit to their excellent treatise, and for the unintentional reproduction of some of their text, even in altered form, without credit. We suggest firmly to contributors—as we have suggested to "D. E."—that the use of another's thoughts and ideas, even though the wording is changed somewhat, is thoroughly distasteful plagiarism, which will not be knowingly permitted in these columns.—The Editor.

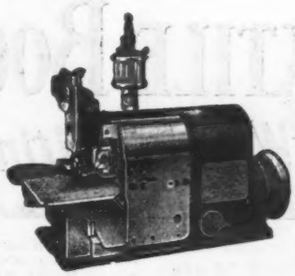
## Link-Belt Motorized Car Spotter Announced

In line with the trend of the times to design machinery more compactly, Link-Belt Company, Chicago, announces that its Vertical-Capstan electric car spotter will hereafter be furnished "motorized", meaning that the motor will be attached direct to side of spotter housing, with the result that no motor shaft coupling or separate motor base plate will be required. With motor bolted to side of spotter housing, proper initial and permanent alignment of motor shaft is assured; and the plan measurements of foundation required are a minimum.

The motor shaft extends into a substantial one-piece housing, which contains all gears . . . a helical-gear reduction at motor, and a worm-gear set. The gears run in oil, and are readily accessible. The motor is of high-torque fully enclosed type, and can be removed as a unit complete with motor pinion, without disturbing the rest of the machine. The capstan is machine finished to prolong the life of the car haulage rope.

The Link-Belt motorized spotter, like its predecessor, is available in two sizes. The smaller machine has a rope pull of 5000 pounds, and the larger size, 10,000 pounds. An eight-page illustrated book No. 1392 covers this new product.

*When you give your orders to your section men to do something that you know they really don't want to do, don't you admire the fellow who goes at the job wholeheartedly, like it was almost a pleasure, Well, now, how do you go at carrying out those same kinds of orders for your superintendent?*—OLD-TIMER.

TRADE MARK
MERROW
REG. U. S. PAT. OFF.

HIGH SPEED TRIMMING AND OVER-SEAMING OVEREDGING AND SHELL STITCH MACHINES

FOR USE IN THE FABRICATION OF KNITTED AND WOVEN GOODS OF ALL KINDS.

—200 VARIETIES FOR 200 PURPOSES—

WRITE FOR DETAILS REGARDING

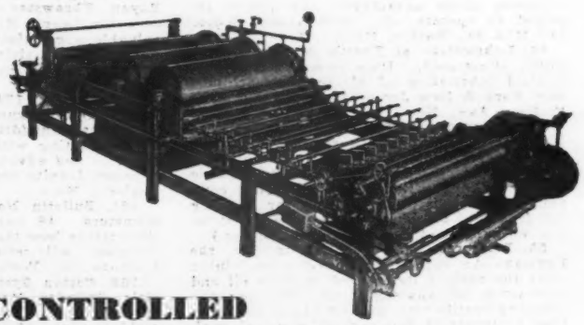
MERROW STYLES 60ABB AND 60D3B MACHINES

PRODUCING A FLAT BUTTED SEAM (AS ILLUSTRATED BELOW) TO FACILITATE SUBSEQUENT PROCESSING OF TEXTILES

FINISHERS REPORT DEFINITE SAVINGS BOTH IN LABOR AND FABRIC. LET US DEMONSTRATE WORK OF THESE MACHINES ON YOUR OWN PRODUCT.

THE MERROW MACHINE COMPANY
16 LAUREL STREET HARTFORD, CONN., U. S. A.

*Southern Representatives:*
E. W. Hollister, P. O. Box 563, Charlotte, N. C.
R. B. Moreland, P. O. Box 895, Atlanta, Ga.



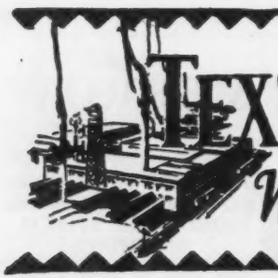
CONTROLLED RAYON WARP SIZING

The new Johnson sizer is almost automatic so effectively are all operations controlled.
Stretch is controlled by a special quick-change gear box.
Loom-beam tension is controlled by a friction disc drive.
Cone pulleys and slip belts heretofore used are entirely eliminated.
A new patented main drive includes in one unit, the motor, variable speed transmission, slow speed, and reverse motion.
A pressure gauge indicates the pressure of the quetsch rolls. The exact amount of squeeze required to impregnate any particular warp may therefore be repeated whenever the same type of warp is run.
Individual steam controls and temperature gauges make it possible to regulate temperature of each cylinder independently.

Write for free descriptive folder TODAY.

CHARLES B. JOHNSON
PIERCY AND HOLSMAN STS., PATERSON, N. J.

Representatives:
Joseph Barnes, New Bedford, Mass.
Carolina Specialty Co., Charlotte, N. C.
Universal Winding Co., Manchester, England.



# TEXTILE BOOKLETS *Worth Writing For!*

*The booklets or catalogs briefly mentioned below may be obtained by any readers of COTTON who will write to the Company issuing them or to COTTON, Grant Bldg., Atlanta, Ga.*

**10. Leathers, Textile**—Booklet No. 101, 48 pages, illustrated. Showing "Bondaron" Check Straps—Lug Straps—Harness Straps—Pickers—Belting, both round and flat, etc., Horsepower tables and other interest ng information. By Charles Bond Company, 617 Arch Street, Philadelphia, Pa.

**11. Whitinsville Rings**—16 page illustrated booklet, describing ring manufacture, measurements, types, uses. How to determine flange sizes. By Whitinsv lle Spinning Ring Co., Whitinsville, Mass.

**15. The Powers System of Thermostatic Control—"Slasher room is Bottle-Neck of Textile Mill."** 18 page illustrated booklet showing importance of proper treatment of cloth in slasher room and advantages of Thermostat over hand control. Also room temperature control illustrations. Issued by Powers Regulator Co., 2739 Greenview Ave., Chicago, Ill.

**21. Warp Sizing and Composition of Cotton**—Folder containing reprints of articles carried by textile publications of interest to progressive mill superintedents. By Seydel-Wooley Co., 748 Rice St., Atlanta, Ga.

**25. "Lupogum" and "Monopole Oil"**—Two booklets on textile sizing and finishing products. Jacques Wolf & Company, Passaic, N. J.

**28. Akron Belting**—Practical rules and general information for users of belting with belting catalog. By Akron Belting Co., Akron, Ohio.

**29. Continuous Card Stripper**—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc., Saco-Lowell Shops, 147 Milk St., Boston, Mass.

**30. Lubrication of Textile Machinery**—32 pages, illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

**38. Sleaziness in Full Fashioned Knitting**—Illustrated survey with samples of fabric showing causes of sleaziness and methods to be employed in eliminating it.—By Textile Machine Works, Reading, Pa. **(This company also issues parts catalog for Reading** full fashioned machines with general information on subject of full fashioned knitting.)

**55. Interpretation of Analysis for the Layman**—An eight page booklet explaining what the various items used in fatty oil and sulfonated oil analysis mean, enabling the ordinary textile man without chemical education to interpret the various chemical analyses. National Oil Products Co., Harrison, N. J.

**63. S-W Paint Standardization Plan**—valuable booklet telling how protective coatings can effect economies in plant operation and maintenance, describing how each surface is finished to best meet its specific needs, giving ideal lighting and sanitary conditions and economies in increased production. Sherwin-Williams Co., 601 Canal Rd., Cleveland, Ohio.

**64. Efficiency and Performance of SKF Roller Bearing Spindles**—A twelve page booklet showing the advantages in power consumption, increased production, savings in lubrication, increased yarn breakage strength to be secured through roller bearing spindles. SKF Industries, Inc., Front St. and Erie Ave., Philadelphia, Pa.

**65. Why Cooper Hewitt Light is Better Than Daylight**—A 16 page booklet explaining in detail the importance of good lighting and the necessity of proper quality as well as proper quantity of light. General Elec. Vapor Lamp Co., Hoboken, N. J.

**N66. Dronsfield's Patent Portable Auto-Feed Needle Point Grinder No. 176**—describing a new departure in card grinding—John Hetherington & Sons, Inc., 250 Devonshire St., Boston, Mass.

**69. Monel Metal Equipment for the Textile Industry**—A 50-page buyer's guide and catalog with more than 100 illustrations of various items of monel metal dyehouse equipment. International Nickel Company, Inc., 67 Wall St., New York, N. Y.

**72. The Merrow Butted Seam**—A 16-page booklet defining and illustrating the Butted seam, describing its properties and outlining some of the advantages to be gained by its use in textile fabrics. The Merrow Machine Co., Hartford, Conn.

**73. New Reeves Catalog No. 99**—a treatise on efficiency speed control—including valuable information of special importance to textile industry men and production executives outlining advanced methods of speed regulation. Reeves Pulley Company, Columbus, Indiana.

**78. Booklet L 1289 A—Loom Motors and Control**—giving details of the low installation, operating and maintenance cost of Westinghouse Loom Motors. Westinghouse Electric & Manufacturing Company, Room 2 N, East Pittsburgh, Pa.

**88. Dayton Cog Belt Catalog**—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

**90. Atwood Booklet**—Describing Atwood Winders, twisters, wire swifts, and various types of feed rolls—useful to throwsters interested in learning the principal features of various Atwood machines. Atwood Machine Co., Stonington, Conn.

**92. Silicates of Soda**—A review of the properties of silicates of soda and their various uses. Philadelphia Quartz Co., 121 S. Third St., Philadelphia, Pa.

**95. Onyx Processing and Finishing Compound Catalog**—A thirty-two page booklet listing and describing entire line of processing and finishing compounds, covering every process on all types of fabric. Onyx Oil & Chemical Co., 15 Exchange Place, Jersey City, N. J.

**97. Suggestions For The Modern Silk and Rayon Throwster**—describing the various uses for Laurel Brand Products and giving valuable suggestions in silk-soaking, degumming, dyeing, sizing and finishing. Laurel Soap Mfg. Co., Inc., 2600 East Tioga St., Philadelphia, Pa.

**100. Bulletin 174. Controlling, Recording, Indicating Instruments for Temperatures, Pressures, Humidity, Flow.** 40 page booklet illustrating with installation photographs the uses and advantages of instruments built to meet definite requirements. Foxboro Co., Foxboro, Mass.

**101. Bulletin No. 169-1, Recording Thermometers.** 48 page booklet describing and illustrating how the installation of proper instruments will result in worth-while savings. Foxboro Co., Foxboro, Mass.

**106. Cotton System Warp Sizing on Multiple Cylinder Machines**—a folder showing the advantages of this type of machine in making warps of acetate and other synthetic yarns and spun silk.—Charles B. Johnson, Paterson, N. J.

**107. Complete Information on Alemite Lubrication.** Showing how costs can be reduced through proper lubrication. Alemite Corp., 1828 Diversey Blvd., Chicago, Ill.

**108. Thickening Materials for Textile Printing**—discussing the more important materials and methods employed in the preparation of color thickenings so that it may be properly and economically transferred to the cloth in textile printing. Stein, Hall & Co., Inc., 285 Madison Ave., New York City, N. Y.

**110. 3-In-One for Industrial Uses**—showing the many industrial uses and advantages of this oil. Three-In-One Oil Co., 70 Varick St., New York, N. Y.

**114. Denman Parts for All Makes of Looms**—showing drawings and dimensions of Denman pickers, hold-ups, bumpers and bunters made of fabric and vulcanized rubber. Denman Tire & Rubber Co., Warren, Ohio.

**115. How to Cut Cloth Room Costs with Automatic Picking Machines and Improved Inspecting Machines**—Hermas Machine Company, Warburton Ave., Hawthorne, N. J.

**117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames**—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Roller Bearing Co., P. O. Box 476, Newark, N. J.

**118. Cotton Picking, Opening and Cleaning Machinery, Cards, Combers, Roving, Drawing, Spinning, Twisting, Rings, Worsted Machinery and Woolen Machinery** — Pamphlets are issued on each of the individual machines. Will be sent to subscribers who make requests on the letterhead of the mill and indicate special pamphlets desired. Whitin Machine Works, Whitinsville, Mass.

**119. The World's Finest Sewing Machines**—a condensed catalog giving details of the various Willcox & Gibbs sewing machines. Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York, N. Y.

**120. Goodyear Mechanical Rubber Goods Catalog**—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

**121. Engineered Packages for the Textile, Dry-Goods and Apparel Industries**—Showing the savings to be made through the use of properly engineered packages of corrugated fibre in the shipping of yarn, woven and knitted products. Hinde & Dauch Paper Co., Sandusky, Ohio.

**122. Water Filters and Filtration Equipment**—Containing complete description of the chemical processes involved in the coagulation and precipitation of foreign matter, the removal of iron, oil, manganese from water and the production of clean water suitable for the textile industry, together with tables of specifications for standard filters, and information showing the extra profits to be made by the mill through reduction in costs and process difficulties, through removal of undesirable impurities in water. Permutit Company, 330 W. 42nd Street, New York, N. Y.

**124. New Condensed Catalog on Ball Bearings and Power Transmission Units**—Combines all of the information and the industrial uses of radial ball bearings as well as the Fafnir power transmission line of wide inner ring and ball bearings. It gives complete information, interchangeability tables, dimensions, prices, etc. Fafnir Bearing Company, New Britain, Conn.

**125. More Light with Lasting Cleanliness**—a booklet pointing out the many advantages of white paint and the qualities to be looked for to get the greatest value in such paint. U. S. Gutta Percha Paint Company, Providence, R. I.

**130—Three New Textile Scouring Agents**—This 32 page book gives many valuable formulas for the use of Houghton's Wonder Powder—a new type of colloidal detergent—in fulling, scouring and finishing nearly all types of woven and knit goods. Also contains several pages of valuable reference and conversion tables. E. F. Houghton & Co., 240 W. Somerset St., Philadelphia, Pa.

**135. The Pick Method of Weaver Wage Payment**—A manual of practical information describing methods to be followed in using Pick Counters; suggested forms, and tables included. Durant Manufacturing Co., 1932 No. Buffum St., Milwaukee, Wis.

**138. Constant-Level Oilers**—Booklet, describing oilers which maintain correct oil level at all times, preventing burning out of motors and bearings. Gits Bros. Mfg. Co., 1851 S. Kilbourne Ave., Chicago, Ill.

**139. Textile Detergents—Theory of the use of alkalis and control of pH.**—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergents in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

**140. Textile Machinery—Improvements in Design and Methods of Lubrication.** A discussion of the problem of lubrication of textile equipment, covering operating conditions and factors affecting and affected by lubrication. Card Room Operations, Twisting and Spinning Machines, Silk Throwing, Looms, Knitting Machines, etc., covered. Available in copy of June 1934 issue of "Lubrication." The Texas Company, 135 E. 42nd St., New York City.

**141. V-Belt Engineering Data Book**—Over 50 pages of pertinent engineering information including data on selecting a V-Belt drive, design of special V-Belt drives, numerous standard tables, charts, and belt and sheave list prices. Manhattan Rubber Manufacturing Div. of Raybestos-Manhattan, Inc., Passaic, N. J.

**143. Winders and Winding**—Describing the various processes in the preparation of cotton, woolen and silk yarn and illustrating and describing the different types of Universal winders and the various attachments to suit the particular winding requirements of the various branches of the textile industry. Universal Winding Co., 95 South St., Boston, Mass.

**144. Some Causes of Low Productivity of Textile Workers**—An interesting pamphlet comparing the output per worker in cotton mills with the output per worker in other industries of the country for the last several years. Emmons Loom Harness Company, Lawrence, Mass.

# KNITTING SECTION

**THE WELT**—*With real elasticity. Inches more of give. It fits the small or the large leg. Construction is automatic—needs no watching once the machine has been adjusted.*

**THE GUSSETOE**—*An actual gusset knitted in when the stocking is made. No seam to mar its smoothness. Real depth for the toes.*

**THE SQUARE HEEL**—*The right angle stitches distribute all strain evenly. Prevent slipping. The size and shape of this new heel are correct and permanent because they are determined by the knitting.*

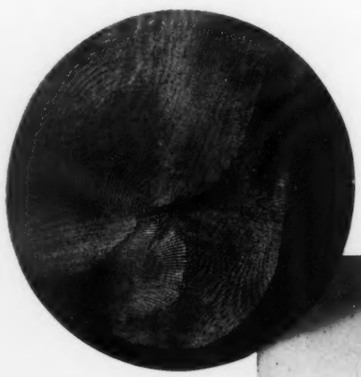
*Look* AT THEM CLOSELY—

And consider the profit-making advantages in these *exclusive* features.

New developments . . . new selling points . . . new savings for you and for the women who buy fine hosiery—all made possible by the *Model K Spiral Gussetoe Machine.*

Thousands of women are demanding really fine hose such as these—at a low price. You can make them—at a cost that challenges competition—on the *Model K Spiral Gussetoe Machine.*

*"This is the Scott & Williams Machine Age"*



ESTABLISHED 1865

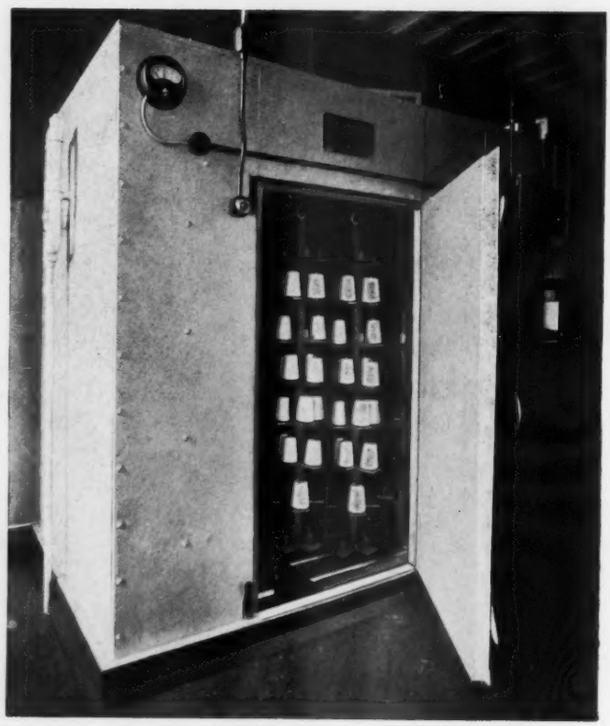
Scott & Williams Inc.

366 BROADWAY, NEW YORK, N. Y.

# The perfected water-vapor principle of the new "H-W" CONDITIONER assures thorough, uniform penetration, down to the last fibre.

ATOMIZATION with spray nozzles and other mechanical means, no matter how fine, can never condition yarns properly. It merely soaks the yarn. The moisture must be in the form of vapor in order to penetrate uniformly and moisten every fibre to the correct degree.

The "H-W" CONDITIONER is the only apparatus in which the air is maintained 100% saturated with a true water vapor. Backwinding and other expensive methods of conditioning are entirely eliminated. Costly seconds are reduced to the minimum.



It will pay you to find out all about this perfect method of conditioning, how simple it is to use, how little it costs to operate, how accurate and thorough it is and performance proof that it will pay for itself in quick time. Full information gladly sent on request.

**THE INDUSTRIAL DRYER CORPORATION**
**STAMFORD . . . . . CONNECTICUT**

# Some Practical Suggestions for Dyeing Laboratory Samples on Silk Hose

By Harry White

A FACTOR in the success of any silk hosiery dyer is the ability to make samples of the various shades that he is called upon to dye and, after making these samples in the laboratory, to compute the formula from a laboratory scale to a working scale for use in the dyeing machine. Each dyer, no doubt, has his own method for arriving at this conclusion, and has reached an excellent degree of perfection. For those that sometimes find themselves in difficulty, or would prefer an easier method than the one that they are using, I would like to offer the following system and suggestions, trusting that they may understand and benefit from them.

### Laboratory Equipment

The first essential thing a dyer must have in his laboratory is enough equipment to enable him to carry out the work of making samples without any guess work. He should have a balance scale capable of weighing as little as 50 milligrams, although most scales that are used for the purpose of weighing up dyestuff are capable of weighing from one (1) milligram on up. Such small weighings of dyestuff are found to be too small for definite calculations and subject to variation. A balance scale that can weigh from 50 milligrams on up may be considered sufficient.

The best means of heating the water of the dyebath and maintaining it at the temperature of the dyeing is by the means of an electric hot plate, having three heats, low, medium and high, with the heating unit hermetically sealed to protect it from the dust and laboratory fumes. The size of each plate should be about 5 inches in diameter, and from one to six plates may be had in a set, each having a separate switch, so that the use of one will not interfere with any of the others.

Other methods of heating the dyebath are by means of a hot water boiler with openings in the top of the diameter of the pots to be used, to enable them to be set down in the boiling water, and by means of a small gas stove, or a gas burner, if gas is available. The water in the hot water boiler is heated by a coil in the bottom, and set with a thermostat to enable it to be kept at the boiling point at all times. For use on the electric heater, a Monel metal pot 7 inches high and 4½ inches in diameter offers the best means of exposing the dyebath to the temperature required, and is one that will withstand any kind of treatment. This pot may also be used on a gas stove or over a gas burner. For use in a hot water boiler, a porcelain pot, the same size, offers the best results, although the Monel metal pot may be used.

There must be in the laboratory sufficient beakers, casseroles, flasks, graduated cylinders and pipettes to enable the dyer to compute his formulae to the smallest degree. There should be about 12 glass flasks preferably those that are made of Pyrex and holding 500 cc; graduated cylinders ranging from 1 cc to 25 cc, 1 cc to 50 cc, 1 cc to 100 cc, and 1 cc to 250 cc; and pipettes graduated in ¼ cc from ¼ cc to 5 cc, ¼ cc to 10 cc, and from 1 cc to 25 cc. Several glass stirring rods are essential in order to agitate the samples in the pots to prevent unevenness and to remove them from the bath whenever adding chemicals or color. It should be seen that the rods are smooth, especially on the ends, to prevent snagging the hosiery.

### Dissolving the Dyestuff

We are now equipped to begin the preparation of dyeing sample shades. Take one stocking of the style wished to be used and weigh it. Suppose it weighs 11½ grams, then dissolve 1,150 milligrams of each dyestuff to be used in 1000 cc of boiling water in separate flasks, or half the amounts, 575 mgs of dyestuff to 500 cc of water. The strength of the solution must be such that 1 cc of color in solution contains .01 per cent dyestuff.

### Percentage Conversion Table

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| .0025 | equals | 1.137 | grams | (.0025 | is | ¼ | cc.) |
| .0033 | " | 1.5 | " | (.0033 | is | ½ | cc.) |
| .005 | " | 2.275 | " | (.005 | is | ½ | cc.) |
| .007 | " | 3.41 | " | (.007 | is | ¾ | cc.) |
| .01 | " | 4.55 | " | (.01 | is | 1 | cc.) |
| .02 | " | 9.1 | " | | | | |
| .03 | " | 13.65 | " | | | | |
| .04 | " | 18.2 | " | | | | |
| .05 | " | 22.75 | " | | | | |
| .06 | " | 27.3 | " | | | | |
| .07 | " | 1 ozs. | 3.4 | grams | | | |
| .08 | " | 1 " | 8.005 | " | | | |
| .09 | " | 1 " | 12.5 | " | | | |
| .10 | " | 1 " | 17.095 | " | | | |
| .20 | " | 3 " | 5.7 | " | | | |
| .30 | " | 4 " | 22.75 | " | | | |
| .40 | " | 6 " | 11.3 | " | | | |
| .50 | " | 8 " | | | | | |
| 1.00 | " | 16 " | | | | | |
| 2.00 | " | 32 " | | | | | |

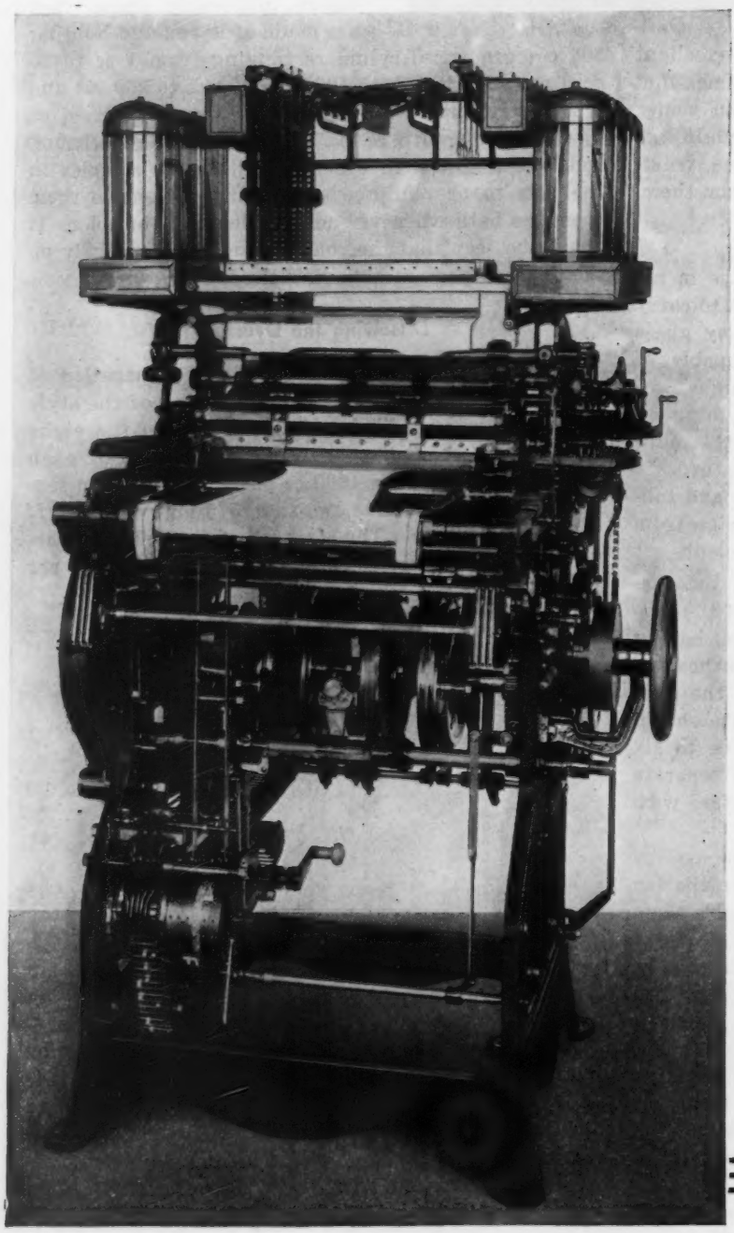
### Dyeing the Sample

Previous to dissolving the dyestuff the selection of the dyestuffs is, of course, made. Taking the shade Solera, for an example, we estimate what we think should be about the correct formula for the style selected, which let us say, is an all-silk 48-gauge full-fashioned stocking, with a cotton seam and cotton

(Continued on page 133.)

# O. K. for "Ringless"

WILDMAN
THE WORLD'S STANDARD



THE Wildman Single Head Full-Fashioned Knitting Machine with three-carrier attachments is the ideal machine for making *Ringless* hosiery. When you have a Wildman —you have the best.

*The*
**WILDMAN**
SINGLE HEAD
*Full-Fashioned*
*Hosiery*
*Machine*

●

*Literature on Request*
WILDMAN MFG. CO.
*Full-Fashioned Division*
NORRISTOWN
PA.

# Reduction or "Breaking Down" of

# Sulphon Cyanine Black B Dyes

## Eliminated in the One-Bath Method

By W. Ashton Daniel,
Dyer, Knitting Dept., Wiscassett Mills Co.

WORKING on the assumption that the main cause for reduction of the Sulphon Cyanine Black B dyes was in the alkalinity of the dye-bath, the writer has experimented with this one factor for the past eight months and earnestly believes that a solution has been reached whereby the reduction of this type of black can be entirely eliminated.

Several years ago two prominent chemists worked on this problem, and as a result of their work and experiments arrived at the conclusion that there were four factors which influenced the reduction of Sulphon Cyanine Black B dyes, namely: 1, Sericin; 2, Aeration; 3, Temperature; and 4, pH or alkalinity.

The writer through logical reasoning and with the idea that this problem should be solved with the least expense to the mill and with the least trouble to the dyer, eliminated three of these factors in the following manner: firstly, the factor of sericin is one which the dyer must deal with in the one-bath method, because of the fact that where we have silk hosiery in the one-bath method we must have sericin. Obviously, it was not worth while to spend any time on this factor. Secondly, the factor of aeration is very problematical. The writer believes that if a small quantity of air could be entered into the dyebath there would be no reduction in this type of black. On the other hand, there are many mills which are not equipped for this kind of work; and needless expense and trouble would be encountered before one would get the desired results. Special apparatus and devices designed for this particular purpose would have to be obtained. Thirdly, it has been found that if the temperature of the bath is kept below 200 degrees F., no reduction of Sulphon Cyanine Black B type would occur. However, it is difficult and well-nigh impossible to degum silk properly and obtain level dyeing at temperatures lower than a boil. Having eliminated three of the four factors in this manner, we now turn to the factor of pH or alkalinity of the dye-bath.

The writer firmly believes that herein lies the cause of so much worry, trouble, wailing and gnashing of teeth when this type of black reduces, and that if the pH of the bath is kept below 9.2 there will be no reduction. The pH of all oils which have been experimented with in the one-bath method drops in pH or alkalinity as boiling goes on, due to the fact that as the sericin is dissolved it neutralizes part of the alkalinity in the bath and the pH of the bath is lowered. As was stated, it was found that no reduction took place below pH of 9.2. It was also found that one gets better and quicker degumming of hosiery if the bath is started off with a pH of 10.6-10.8. In checking on one particular boil-off oil it was found that with a certain amount used the bath was begun with a pH of 10.8 and in 30 minutes lowered to 9.6. Since reduction does not take place below 9.2, one can readily see that in all probability the bath, which does not go lower than pH 9.6, will experience the reduction of the black. This does not mean that all degumming baths that have a pH of 9.6 or above will cause the black to reduce, but the reduction is more likely to take place. As a result of experimenting with the pH values it was found that in order to keep the black dyes of this type from reducing the alkalinity or pH had to be increased to around 11.0 at the start of the run and allow it to gradually drop for the first thirty minutes in order to degum the hose sufficiently and then lower the pH to around 9.0, add the dyestuffs, and continue the dyeing at pH 9.0.

In order to increase the alkalinity of the bath to the desired pH it was necessary for economy's sake to use a stronger alkali. On account of the fact that ammonium hydroxide or commercially speaking aqua ammonia 26 degrees Baume breaks down into water and ammonia gas upon boiling as shown in the following equation:

$$NH_4\ (OH) = NH_3 \text{ plus } H_2O,$$

this alkali was used. The ammonia gas usually goes off in twenty or thirty minutes when aqua ammonia is boiled. This rate of decrease in pH of ammonia is shown in Plate 1. Five cc's of aqua ammonia 26 degrees Baume in one liter of water were used. The water used was soft water with pH of 8.9.

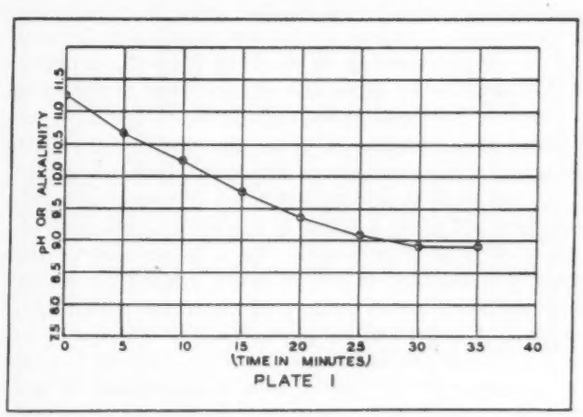


PLATE 1

It was found that by using aqua ammonia with the boil-off oil, less oil was used and the goods were

degummed in less time. At the end of 30 minutes the stockings were degummed but the pH of the bath was still above the danger line. The pH of the bath being 9.6. By adding a small amount of acetic acid 56 per cent diluted in a dipper of water it was possible to lower the pH of the bath to 9.0. Let no one get the idea that the dyeing is done in an acid bath as the writer does not advocate that method. The small quantity of acid is used only to lower the pH of the dyebath below the danger line which is about 9.2-9.3. The dyeing is done in an alkaline bath with a pH of 9.0.

The amount of aqua ammonia and the amount of acetic acid used is entirely based on the kind of boil-off oil used. An oil which has a high pH at the start-of the run and does not drop very low of course requires less ammonia and more acetic acid and vice-versa. The dyer will have to adjust the amount of ammonia and the amount of acid used to his own conditions, taking special care not to add too much acid. In the way of a guide, from actual experiments it was found that with an oil which starts at the beginning of the run with a pH of 10.8 and drops to pH 9.6 in 30 minutes the following procedure was followed: for a 50-pound machine, having 40 pounds of goods, 4 pounds of degumming oil and 1 pound of ammonia were used. The goods, oil and ammonia were placed in the machine and ran for 30 minutes at a good boil with the lids of the machines closed. At the end of 30 minutes 140 cc's of 56 per cent acetic acid were diluted in a dipper of water and slowly added. The dye was then added very slowly and the lids of the machine were left open during the remainder of the dyeing operations. Right at this time it might be said that by leaving the lids of the machine open after the dye is added helps the factor of aeration which was previously discussed. This, of course, requires more steam to keep the bath up to a boil, but it more than overbalances the trouble, worry, cost, etc., one would have if it were not done.

Different styles and different weights of hosiery, of course, require different amounts of chemicals, but if the dyer wishes to eliminate the reduction of the Sulphon Cyanine Blacks, it will save him many headaches, and will also save the company many dollars if the foregoing information is followed.

The following is a list of trade names of typical Sulphon Cyanine Black B dyes and the Manufacturers, Colour Index 307:

| Color Name | Manufacturer |
|---|---|
| Aceko Milling Black GD | John Campbell & Co. |
| Aceko Milling Black N | John Campbell & Co. |
| Amacid Milling Black SB | American Aniline Products Co. |
| Durol Black 2B | National Aniline & Chemical Co. |
| Durol Black B. | National Aniline & Chemical Co. |
| Durol Black BA | National Aniline & Chemical Co. |
| Pontacyl Fast Black BBO | E. I. DuPont de Nemours & Co. |
| Sulphon Cyanine Black BA | General Dyestuff Corp. |
| Sulphon Cyanine Black DN | General Dyestuff Corp. |
| Sulphon Cyanine Black JB | General Dyestuff Corp. |
| Sulphon Cyanine Black J | General Dyestuff Corp. |
| Sulphon Cyanine Black JM | General Dyestuff Corp. |

The above type of dyes are considered to have the best shading, stripping, and fastness properties desired for dyeing silk hosiery.

# Anticipating Silk and Yarn Needs

By M. M. Abrams
Ajax-Vertex Associates, Inc.

IN AN efficiently operated hosiery mill of any size, silk and yarn requirements should be anticipated and estimated prior to their consumption. The larger the plant, the more necessary this is. In an organization comprising several units it is absolutely essential. It makes no difference whether the mill does its own throwing or whether it uses a commercial throwster or buys silk direct from a throwing house. In all three cases requirements must be calculated ahead of time in order that the material will be ready for consumption when the demand arises.

It can well be understood what tremendous losses are involved when a plant is forced into idleness because of lack of material. To a lesser degree but equally important is the idleness caused on an individual machine or battery of machines which have to be shut down for the same reason. I know of no mill that can efficiently operate its factory on a basis of guessing at the anticipated consumption of materials. Guess work results in either an overstock of materials or an under-supply.

Where a plant is manufacturing different styles of varied thread constructions, the stock of materials has to be very carefully watched and gauged. Often some machines are changed over from one style to another and this requires re-arrangement of all schedules for materials.

The first consideration is to be given to the set-up of machines according to styles and the estimated production to be obtained from these machines. This estimated production can be calculated on a weekly basis, semi-monthly basis or monthly basis. This is left to the discretion of the manager of the plant whose responsibility it is to decide on these details. Form I herewith shows such a machine set-up with the estimated weekly production per style. The illustration shows the number of machines on a style, the estimated production per machine for one shift on a basis of 100 per cent efficiency and the total production coming off these machines for two shifts of forty hours each. In other words, this estimate is based on two shifts for a week's production. The illustration shows the estimated production for several plants which operate under combined supervision.

From the data contained on Form I, the theoretical silk and yarn requirements are calculated. Form II shows the complete lay-out of materials required for Plants No. 1 and No. 2. The style, the number

## MACHINE SET-UP

Week ending March 9, 1934

Plant No. 1

| No. Machines | Style | 100% Efficiency | Total Production |
|---|---|---|---|
| 2 | 100 | 38 | 152 |
| 7 | 120 | 39 | 546 |
| 2 | 130 | 42 | 168 |
| 4 | 140 | 41 | 328 |
| 6 | 150 | 43 | 516 |
| 10 | 160 | 43 | 860 |
| 7 | 170 | 49 | 686 |
| 6 | 180 | 49 | 588 |
| 4 | 190 | 43 | 344 |
| 48 | | | 4188 |

Plant No. 2

| No. Machines | Style | 100% Efficiency | Total Production |
|---|---|---|---|
| 8 | 200 | 49 | 784 |
| 10 | 210 | 42 | 840 |
| 18 | | | 1624 |

FORM I—Machine Set-up for two plants.

## SILK AND YARN REQUIREMENTS

Week ending March 9, 1934

Plant No. 1

| Style | Machines | Prod. | 100% Prod. | Silk Standard | | 100% Silk Standard | 3/1 | 4/1 | 5/1 | 6/1 | 7/1 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 100 | 2 | 38 | 152 | 4/1 | .415 | 63 | | 63 | | | |
| | | | 152 | 6/1 | .32 | 48 | | | | 48 | |
| | | | 152 | 7/1 | .04 | 6 | | | | | 6 |
| 120 | 7 | 39 | 546 | 3/1 | .34 | 185 | 185 | | | | |
| | | | 546 | 6/1 | .40 | 218 | | | | 218 | |
| 130 | 2 | 42 | 168 | 4/1 | .415 | 69 | | 69 | | | |
| | | | 168 | 6/1 | .32 | 53 | | | | 53 | |
| | | | 168 | 7/1 | .04 | 6 | | | | | 6 |
| 140 | 4 | 41 | 328 | 4/1 | .425 | 139 | | 139 | | | |
| | | | 328 | 6/1 | .30 | 98 | | | | 98 | |
| | | | 328 | 7/1 | .04 | 13 | | | | | 13 |
| 150 | 6 | 43 | 516 | 4/1 | .39 | 201 | | 201 | | | |
| | | | 516 | 5/1 | .22 | 114 | | | 114 | | |
| | | | 516 | 6/1 | .05 | 26 | | | | 26 | |
| | | | 516 | 7/1 | .04 | 21 | | | | | 21 |
| 160 | 10 | 43 | 860 | 4/1 | .39 | 335 | | 335 | | | |
| | | | 860 | 5/1 | .22 | 189 | | | 189 | | |
| | | | 860 | 6/1 | .05 | 43 | | | | 43 | |
| | | | 860 | 7/1 | .04 | 34 | | | | | 34 |
| 170 | 7 | 49 | 686 | 4/1 | .39 | 267 | | 267 | | | |
| | | | 686 | 5/1 | .22 | 150 | | | 150 | | |
| | | | 686 | 6/1 | .05 | 34 | | | | 34 | |
| | | | 686 | 7/1 | .04 | 27 | | | | | 27 |
| 180 | 6 | 49 | 588 | 4/1 | .39 | 229 | | 229 | | | |
| | | | 588 | 5/1 | .22 | 129 | | | 129 | | |
| | | | 588 | 6/1 | .05 | 29 | | | | 29 | |
| | | | 588 | 7/1 | .04 | 23 | | | | | 23 |
| 190 | 4 | 43 | 344 | 4/1 | .39 | 134 | | 134 | | | |
| | | | 344 | 5/1 | .22 | 75 | | | 75 | | |
| | | | 344 | 6/1 | .05 | 17 | | | | 17 | |
| | | | 344 | 7/1 | .04 | 13 | | | | | 13 |
| | 48 | | 4188 | | | 2988 | 185 | 1437 | 657 | 566 | 143 |
| Plant No. 2 | | | | | | | | | | | |
| 200 | 8 | 49 | 784 | 4/1 | .39 | 305 | | 305 | | | |
| | | | 784 | 5/1 | .22 | 172 | | | 172 | | |
| | | | 784 | 6/1 | .05 | 39 | | | | 39 | |
| | | | 784 | 7/1 | .04 | 31 | | | | | 31 |
| 210 | 10 | 42 | 840 | 4/1 | .405 | 340 | | 340 | | | |
| | | | 840 | 6/1 | .05 | 42 | | | | 42 | |
| | | | 840 | 7/1 | .41 | 344 | | | | | 344 |
| | 18 | | 1624 | | | 1273 | | 645 | 172 | 81 | 375 |

FORM II—(Materials calculated in one-hundredths of a pound).

of machines, the estimated production per shift, the total production for the week off these machines and the different counts of silk and the amounts of these required for the various constructions are all shown.

By looking over the capitulation carefully one can see the intricate problem involved in properly ascertaining the theoretical materials required for the week's production.

Guess work in a plant such as this would be out of question and would only result in costly mistakes. Too much stock of materials is almost as bad as not enough. Overstock ties up money which might be better put to other use.

The figures for each count of silk are then totalled at the bottom of the sheet and requisitions ordering these materials are made out from these figures. Of course they should be compared to inventories on hand and then balanced off properly.

This record may appear intricate at first glance but it is comparatively simple to repeat after it has once been done. The estimated production of a style per machine can be taken either from the actual production records of the plant or from time studies if they are available. The materials contained in the various styles are, of course, taken from the cost cards or construction cards which should be kept on all styles. These materials are calculated in one hundredths of a pound.

---

## Dyeing Laboratory Samples on Silk Hose

(Continued from page 129.)

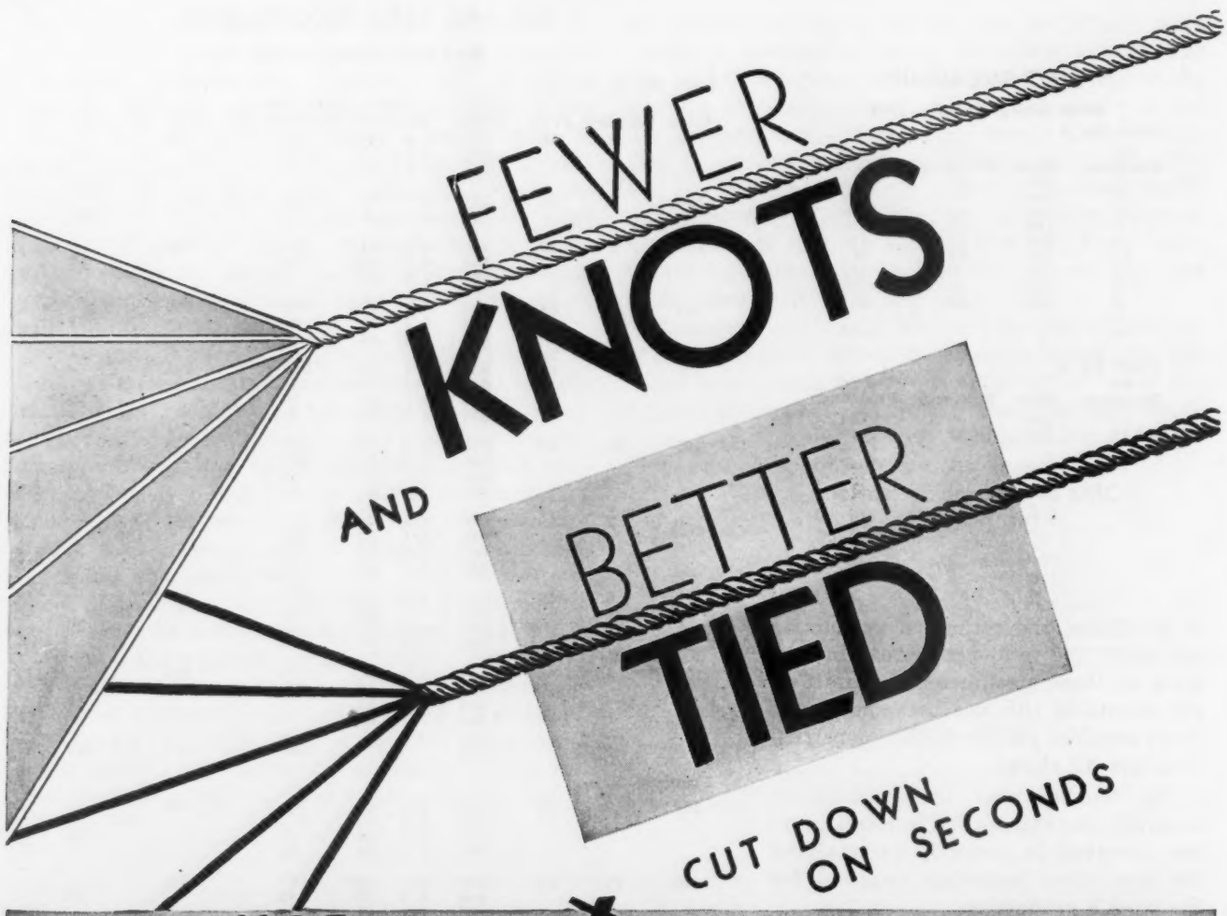
looping at the heel and toe. After measuring the correct number of cc, according to our formula, we dye the sample by the method we use in dyeing silk hosiery, it making no difference whether the method be the one bath, the salt bath, or the acid bath, and work the sample stocking exactly as it would be run if it were a large lot in a dyeing machine. When the correct formula has been attained, we make another dyeing, checking the first results to assure ourselves that no error has been made.

### Solera

| | | 100 lbs. |
|---|---|---|
| Diphenyl Fast Brown SL ... | .60 | 269 grams |
| Diphenyl Fast Yellow GA .. | .13 | 58 " |
| Fast Neutral Black B ..... | .51 | 228.5 " |
| Fast Silk Brown R ..... | .70 | 313.7 " |
| Fast Silk Yellow G ..... | .34 | 152.5 " |
| Glauber Salt ..... | 12 per cent | 12 lbs. |

We then refer to our percentage conversion table and figure the number of grams required to dye the shade per 100 pounds. If every detail of the sample dyeing has been carefully executed the formula should check, and require very little shading in the dyeing machine.

For those dyers fortunate enough to have a sample dyeing machine in their laboratory, the advice with regard to the heating of the dyebath, etc., will not be of interest, but it is hoped that they may gain by the rest of this article if they have encountered any difficulty in dyeing their samples.




USE
ABERFOYLE *Durene* YARNS

Any manufacturer knows that "knots", particularly if they are not well tied, are apt to break out and cause the small holes that mean seconds in the finished fabric. Because of our exclusive process of mercerization, however, Aberfoyle DURENE Yarn is so much softer and more elastic that it offers tremendous resistance to breaking. Efficient mill management prevents careless quilling, and inspection is so rigid that the few knots which do occur are perfectly tied.

Insure increased efficiency and more profitable operation for your mill by specifying Aberfoyle DURENE Yarn, the yarn with fewer knots.

*Representatives in leading textile centers throughout the world.*

aberfoyle
MANUFACTURING COMPANY

123 SOUTH BROAD STREET PHILADELPHIA, PA.

## A Discussion of the Parts of Scott & Williams Knitting Machines

### Plate 40

*(This continues the series of short articles discussing the machine parts on Scott & Williams machines, by taking up in order the various plates in the manufacturer's catalog with which all men using this make of machine are familiar.*

*The first article, on page 126, October 1932 issue, covered Plate I, Plate II, and Plate III; and the second article on page 86, November 1932 issue, covered Plate IV. The third article on page 97, December 1932 issue, took up the parts shown on Plate V. The fourth article on page 94, January 1932 issue, covered Plates VI, VII and VIII. The fifth article, on page 101 of the February issue, covered Plate IX. The sixth article, on page 73 of the March issue, covered Plates X, XI and XII. The seventh article, page 84, April issue, covered Plate XIII, and the eighth, page 89, May issue, described the parts on Plate XIV. The ninth article, page 81, June issue, covered Plates XV and XVI. The tenth article, page 97, August issue, discussed Plates XVII and XXI. The eleventh article, covering Plates XVIII and XXII, appeared on page 93 of the November issue. The twelfth article, covering Plate XXVIII, was on page 95 of the January 1934 issue. The thirteenth article, covering Plate XXIX and beginning Plate XXX, was on page 98, March 1934 issue. The fourteenth article, on page 125, June 1934 issue, completed the discussion of Plate XXX. The fifteenth installment, page 99, August, covered Plate XXXI.*

*It is suggested that in reading these discussions, the reader turn to the plate in question in the catalog and refer to it while reading the comments found in these articles. Furthermore, it will be a good idea to clip these discussions and file them in the catalog along with the plates to which they refer.*

*The numbers in parentheses following the names of parts are the same numbers used by the manufacturers in referring to the parts in the catalog.—The Editor.)*

EDITOR COTTON:

### S. & W. Plate 40

The fashion marks attachment shown on Plate 40 is numbered among the first attachments which were added to the old plain Model K machine. It was developed to imitate the narrowings in ladies' full-fashioned hosiery with the idea of stimulating sales of ladies' seamless hosiery. In most cases an imitation seam, made with a separate attachment on the knitting machine or a sewn seam made with a seaming machine was used in connection with the fashion marks attachment. The basic idea was of course to give seamless hose, made in this manner, some of the ear marks of full-fashioned hose.

Quite a number of names were coined for goods made with this attachment, such as semi-fashioned hose, genuine three-seam hose, imitation full-fashion, etc. Perhaps the ladies' seamless hose industry would have been better off to have stood on its own feet and advertised its merchandise as being seamless rather than to lean on the full-fashioned industry. The writer had the pleasure of hearing a regular country gal express herself in favor of plain seamless hose by saying, "They haint got nary a seam to hurt yore feet."

Adding attachments to any circular machine will naturally bring on complications and various minor troubles which must be overcome in one way or another. I will attempt in the course of this discussion to give some suggestions regarding the care and adjustment of the fashion marks attachment as used on Model K and other Scott and Williams machines, also a brief description of the manner in which the attachment operates.

Some of the parts shown on the plate are used on all models, others only on certain machines. The basic idea of the attachment lies in designing and controlling the right-hand stitch cam (9098), so that it can be raised and lowered during part of the leg knitting. This is accomplished by providing a shoulder screw (6905) in the right-hand hole of the stitch cam which serves as a pivot and the swivel stitch cam stud (6904) in the left-hand hole which acts as a guide, stop screw and means of connecting the balance of the attachment to the right-hand stitch cam.

The stitch cam operating rod (9093) rests direct-

WE invite our readers to make use of this department for the discussion of any and all problems arising in connection with the knitting mill from the office to the packing and shipping departments. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing. All questions will be answered as promptly as possible. The names and addresses of the contributors must be given, but will be held in confidence and a pen name substituted when printed. All acceptable contributions other than questions will be paid for after publication. The editors do not hold themselves responsible for any statement of opinion or fact which may appear in this department unless so endorsed. This department is open to all.

◆ ◆

ly under the stud (6904), the stud in turn is held down by the spring (10060) so it remains constantly in contact with the rod (9093). In order to provide space for up-and-down movement of the stud (6904) it is necessary that the stitch cam bracket on Model K (and other models using the same brackets) be slotted downward where the stud (6904) passes through the bracket.

Making the fashion marks is accomplished by placing *two short butt long latch needles* at a given place in the short butt needles, the space between the long latch needles to correspond to the space between the narrowings on full-fashioned hose. The number of fashion marks which are put into the hose will vary according to the individual ideas of the different manufacturers. As a rule they correspond to the total number of narrowings used on full-fashioned goods. The finer gauges will of course require more fashion marks over a given number of inches than the coarser gauges.

The fashion marks as previously stated are made by lowering one end of the right-hand stitch cam, when the cam is in the downward position it must still raise all the regular latch needles high enough to get each course of loops below the needle latch. The loops on the long latch needles will remain on the latch for one or two courses while the cam is down, thus giving a tuck stitch referred to as fashion marks in connection with this attachment.

### Adjustment of Attachment

Increasing or decreasing the up and down movement of the stitch cam operating rod (9093) is accomplished by raising or lowering the adjusting link (9092) which is fastened to the link (9090). The link (9090) in turn is raised successively by the chain links (5649-5650), the fashion marks lever stud (10050), the lever (5368) and the fashion marks catch (5363). The fashion marks lever stud (10050) fits into an oblong hole in the lever (5368) which permits moving the stud (10050) backward or forward, thus timing it to the fashion marks links according to the chain pawl plate adjustment. When the chain pawl plate has made a full forward stroke, the stud (10050) should be set so it rests directly on top of the fashion marks lug of the chain link. When the stud is in this position, the stitch cam is down and the fashion marks are being made by the long latch needles. The stitch cam remains down for two courses, then the trip rod (9095) comes forward and strikes the fashion marks releasing rod (10055), which knocks the fashion marks catch (5363) off the lever (5368) causing the link (9090) to fall, thus raising the stitch cam to its normal height and causing the long latch needles to cease making fashion marks.

The spring (10054) which is attached to the catch (5363) and to the base of the machine fills a twofold need. It helps to pull the link (9090) down when the catch (5363) is released and assures raising the stitch cam promptly. It also helps to hold the stitch cam up so that the pressure of the needles going over the stitch cam will not force the stitch cam down during the time the cam is inactive. Many fixers make a mistake in shortening the spring (10054) so as to increase its pulling power because for some reason or another the stitch cam does not raise quickly enough. If the attachment does not act freely, it is usually a case of shoulder screws being too tight in various places, stitch cam operating rod (9093) improperly fitted, fashion marks link (9090) being bent or out of line with lever (5368) and stitch cam operating rod (9093), lever (5368) binding on shaft (6503), stitch cam binding against the cylinder or bracket or stitch cam shoulder screw (6905) being too tight. Excessive tension on the spring (10054) will also cause unnecessary breakage of the stitch cam operating rod where the shoulder screw (10051) passes through the rod into the bracket (9094).

The upper portion of the slotted hole in the stitch cam bracket can also be broken out by excessive tension on the spring (10054). Make sure that the trip rod pin (10057) does not bind the rod against the stud (10056), also that the trip rod moves freely in its guide slot in the lever (5368). The pawl (5299) is not a part of the fashion marks attachment for plain machines, but must be used to replace a similar pawl when the attachment is applied to any model using an auxiliary racking pawl.

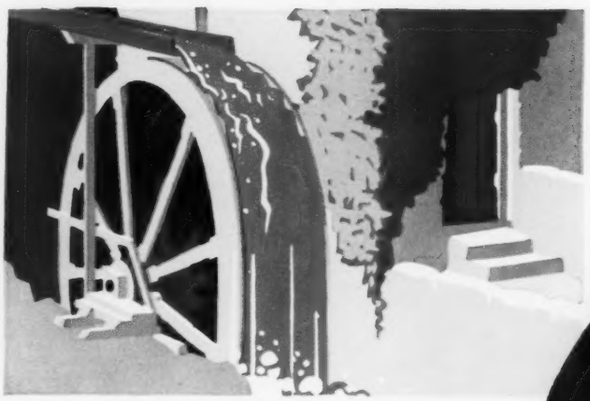
The stitch cam operating rod (9399) and lever link (9400) are used only on machines making transferred numbers. Lever (9093) and link (9400) operate from above the stitch cam on such machines to permit in-and-out movement of the stitch cam brackets which is necessary on transferred numbers.

### Summary of Fashion Marks Stitch Cam Troubles

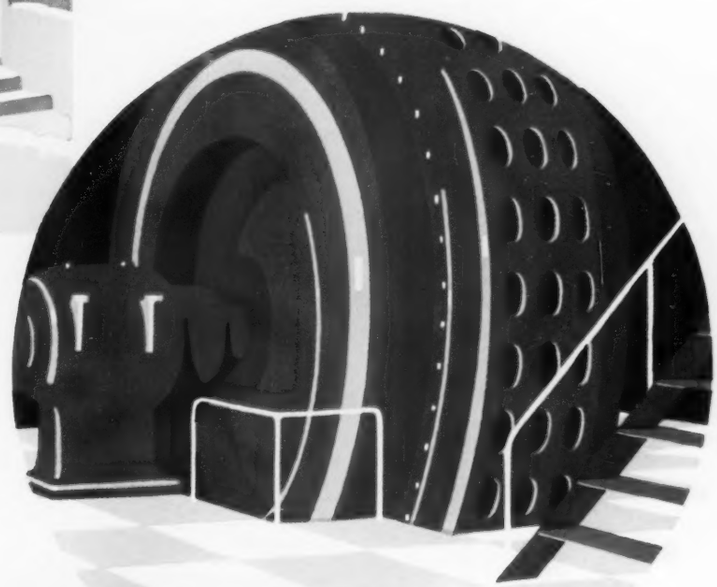
Several changes had to be made in the design of the right-hand stitch cam in order to make it adaptable for making fashion marks. First, it had to be pivoted on one side to provide up-and-down motion so the stitches could be held on or shed off of the long latch needles. Next, the top portion of the stitch cam just above the pivot screw (6905) had to be lowered considerably to assure holding the stitches on the long latch needles when the left end of the stitch cam was down. However, a sufficient margin of stock had to be left at this same point to assure shedding the stitches off of the regular latch needles, otherwise tucked stitches would result all the way around in the fabric. In order to assure good results, the machine builders designed the stitch cam (9098) shown on the plate.

One of the most common troubles encountered when fashion marks attachments were applied on K machines was tucked stitches being made by the long latch needles in the hem of the hose. This was especially evident if the manufacturer desired to knit the hem extremely loose, and it was caused by the cylinder being raised too high while knitting the hem. Putting too much tension on the hem yarns will increase this trouble. Many fixers would file out the slot in the stitch cam bracket so the stud (6904) would raise higher than its normal position trying to overcome this particular trouble, and find that they went from the frying pan into the fire. The particular trouble mentioned was more predominant

**The waterwheel once served the purpose—**



**—but today's way is the powerful turbine**



# TORRINGTON NEEDLES ARE

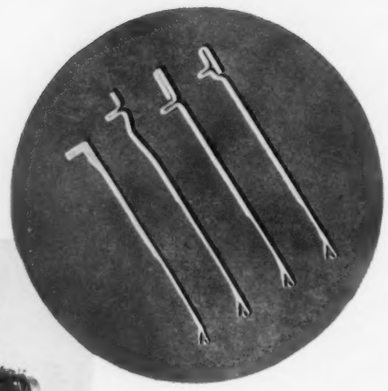
*made today's way*

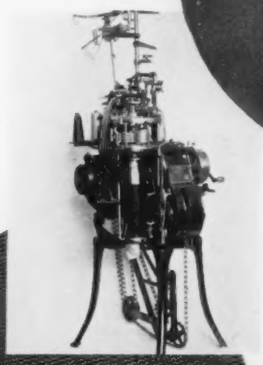
Picturesque, the old water-wheel of a hundred years ago. But hardly adequate for the power needs of a modern mill today. So Progress replaced this old-timer with giant turbines—behemoths of power . . . . reliable always, day in, day out . . . . never tiring, never faltering in the perfect way they perform.

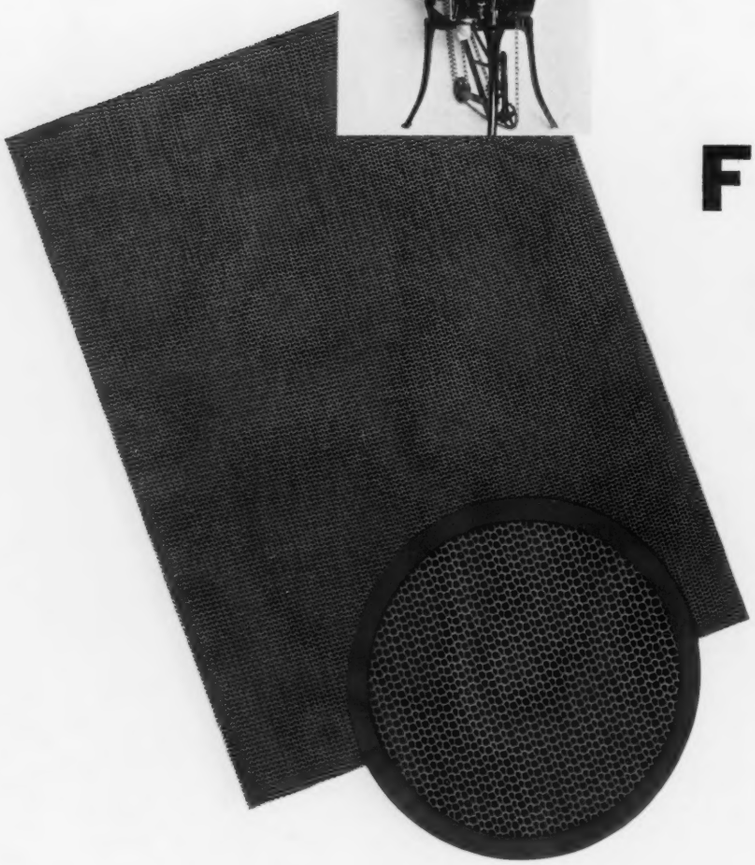
Likewise, Progress brought about a more modern way to make needles: by *machine*—as Torrington makes them. It eliminates the inaccuracies inherent in the handmade method. It gives every needle a machine-like uniformity in temper, tension and dimension—resulting in longer life per needle, a lower re-needling cost, and a finer, more evenly knit fabric.

# TORRINGTON *SPRING BEARD* NEEDLES

*Shown here is another example of fine fabrics . . . produced by Miller Smith Hosiery Mills of Chattanooga, on a Scott & Williams Model K Machine equipped with Torrington Needles.*







# FINE FABRICS

Men who know knit goods know that fine fabrics can be produced only with fine equipment.

That is why so many famous knitting machines come to you equipped with Torrington Needles. For the builders of these machines know from experience that the uniformity and precision of Torringtons are an extra asset when the machines start to operate . . . an added assurance that their own mechanical masterpieces will not be hindered by needle trouble in producing the fine fabrics they were built to produce.

*The Torrington Company*
ESTABLISHED 1866
*Torrington, Conn., U.S.A.*

BRANCHES:

| | | |
|---|---|---|
| THE TORRINGTON COMPANY, | 1640 FAIRMOUNT AVE., | PHILADELPHIA |
| THE TORRINGTON CO., INC., | 200 FIFTH AVE. | NEW YORK, N. Y. |
| THE TORRINGTON COMPANY, | 538 SOUTH WELLS ST., | CHICAGO, ILLINOIS |
| THE TORRINGTON COMPANY | UNITED BANK BLDG. | GREENSBORO, N. C. |
| THE S. M. SUPPLIES CO. | 210 SOUTH STREET | BOSTON, MASS. |
| LOS FABRICANTES UNIDOS, | 964 CALLE BELGRANO. | BUENOS AIRES |

FACTORIES AT:

TORRINGTON, CONN. . UPPER BEDFORD, QUEBEC
COVENTRY, ENGLAND . AACHEN, GERMANY

# TORRINGTON *Latch* NEEDLES

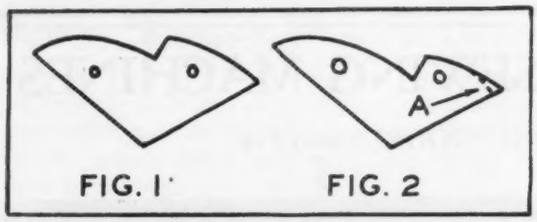



Fig. 1.—Regular right-hand stitch cam No. 7015. Fig. 2.—Fashion marks right-hand stitch cam No. 9098 . . . . . .

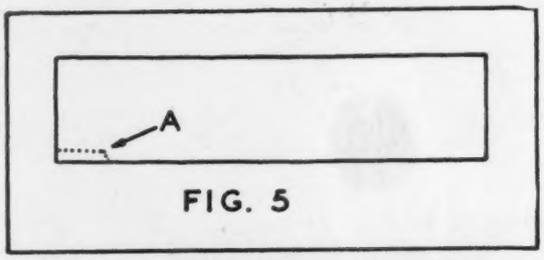



Fig. 5.—Full width slide cam No. 7175 for fashion marks attachment shown in solid lines. Offset on regular slide cam shown at A . .

on machines equipped with the old Style 4-sinker head. Better control of loose knit fabric and a more elastic hem can be made with the style 6 sinker head due to its being supplied with a spring band to hold the sinkers *in*.

Lowering the top of the stitch cam just above the pivot screw made it more difficult to keep the right-hand up-pick adjusted properly. Fig. 1 shows the regular stitch cam. Fig. 2 shows the fashion mark stitch cam. The recess in the top of the cam where the pick lies had to be lowered proportionately with the upper stitch cam surface to make sure that needles coming over the top of the stitch cam would get above the lip on the up pick. Thus the distance which the right-hand up-pick had to travel to raise a needle high enough to clear the upper center cam had to be increased. This was accomplished by lowering the recess in the up-pick (9409) at a point where the pick rests when down. Fig. 3 shows the regular up-pick plate for Model K. Fig. 4 shows the fashion marks plate.

### Pick Adjustment

When the upper surface of a fashion mark stitch cam becomes worn, the fixer will find it difficult to get a proper pick adjustment. He will find that when he adjusts the plate (9409) upward to make the pick raise the needles high enough, the pick will not go down deep enough in the recess in the stitch cam to allow the needles to get above the lip of the pick when it is down. This can be overcome by grinding a slightly deeper recess in the stitch cam (providing it is not worn excessively) and likewise lowering the recess in the up-pick plate proportionately. The recess in the up-pick plate should not be ground straight down as it will cause the pick to bind, break picks and needle butts and injure the cylinder walls. The pick raising surface on the up-pick plate should be tapered and well polished so the pick will raise gradually and work freely. (See *A* in Fig. 4).

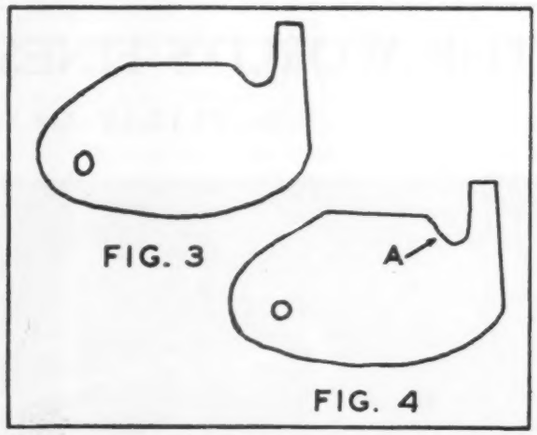



Fig. 3.—Regular up-pick plate for Model K No. 7493. Fig. 4.—Up-pick plate for K used with fashion marks attachment. (Up-pick plate No. 9409 shown on Plate 40 is for B-5 machine) .

Another trouble which the fixer encounters on the Model K machine is that he finds it difficult to get the needles which run at the lower level (needles without jacks) to run *above* the point of the stitch cam when it is down making fashion marks, and to get the same needles to run *below* the point of the stitch cam when the auxiliary slide cam (7175) goes in during the hem makeup. The former can be overcome by lowering the point of the stitch cam slightly. (Note line *A* in Fig. 2). The latter can be overcome by using a full width slide cam (7175) which was made expressly for overcoming this trouble. (See Fig. 5).

None of the fashion marks or stitch cam or up-pick troubles which I have mentioned are especially difficult to overcome, and the machine builders have left ample room for fitting and adjusting the various parts so they can be made to give good service and operate efficiently. I am confident that the experienced fixer will agree that closer adjustments, better fitting, careful grinding and polishing of stitch cams and up-pick plates, when used with the fashion marks attachment, are vitally important, and more attention must be paid to these parts than to similar parts on Model K machines not equipped with a fashion mark attachment.

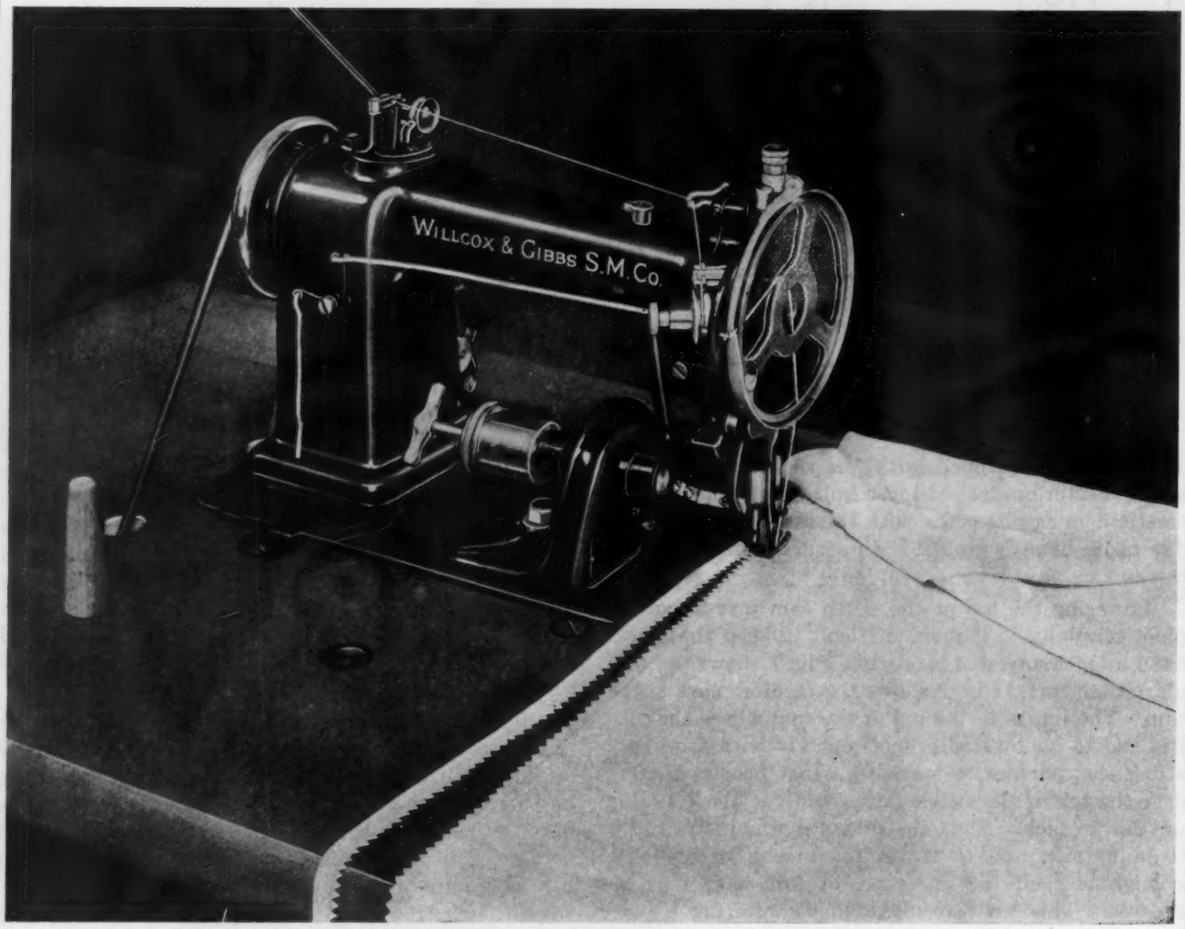
Bringing out a new attachment for one particular thing always opens up a field for new ideas and new uses. This was true of the fashion marks attachment, for as soon as it became popular various mills began to use it for making pineapple hose, mesh hose, and lace hose, in ladies', misses' and half-hose numbers. Some lasted a season or two, others are still in use. During the early stages, fashion marks attachments were not available for small diameter B-3 machines such as 2¼, 2½ and 2¾-inch, which use the adjustable type stitch cams. Later on, however, a device was developed for these machines also, using most of the parts shown on Plate 40 and a special stitch cam arrangement plus a few controlling parts. This attachment is very simple and operates like the device shown on Plate 40.

The next discussion will cover the fashion seam attachment shown on Plate 37, Plate 38 and Plate 39.

CONTRIBUTOR No. 6038.

# THE WORLD'S FINEST SEWING MACHINES

1859----75 YEARS OF SEWING PROGRESS----1934




## WILLCOX & GIBBS

*HIGH-SPEED LOCKSTITCH*

## PINKING & SEAMING MACHINE

*TYPE No. 26*

**Pinked seams, at increased speed, pinked and stitched in one operation, with an unlimited variety of pinked edges and instant adjustment of width of seams and length of stitch. Our representative will be glad to call with the details.**

*OPERATES AT A SPEED OF 4,000 STITCHES PER MINUTE*

# WILLCOX & GIBBS

## SEWING MACHINE COMPANY

*HOME OFFICES*

656-658 BROADWAY, NEW YORK, N. Y.

*New Willcox & Gibbs Machines and genuine Parts may be purchased only from company's offices*

## Running "Rubber-Yarn" in Knit Goods

EDITOR COTTON:

Within the past year or so, rubber yarn has played an important part in the making of knit goods, and is at the present being used extensively in the production of hosiery.

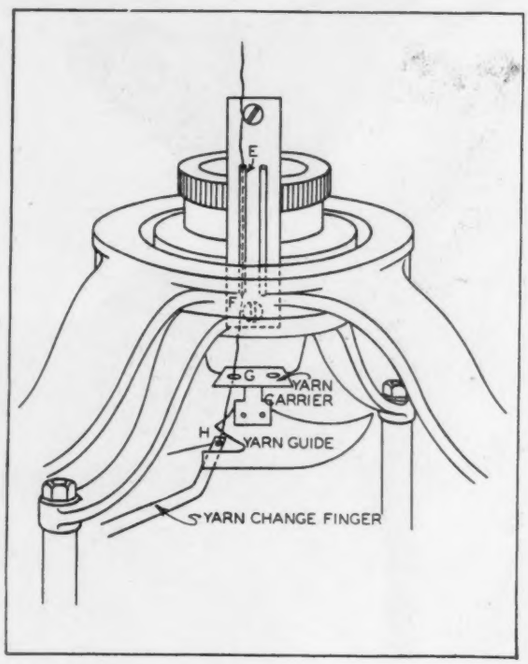
Three-quarter length golf socks with an elastic to fit just above the calf of the leg is one use, and a sport anklet sock for both men and women, with an elastic band around the ankle, is another. Men's socks with this elastic band have proven quite popular because the rib portion of the sock is made extra long, with one inch of this rubber elastic knit in at the top rib so that it comes above the calf of the leg, eliminating the use of garters.

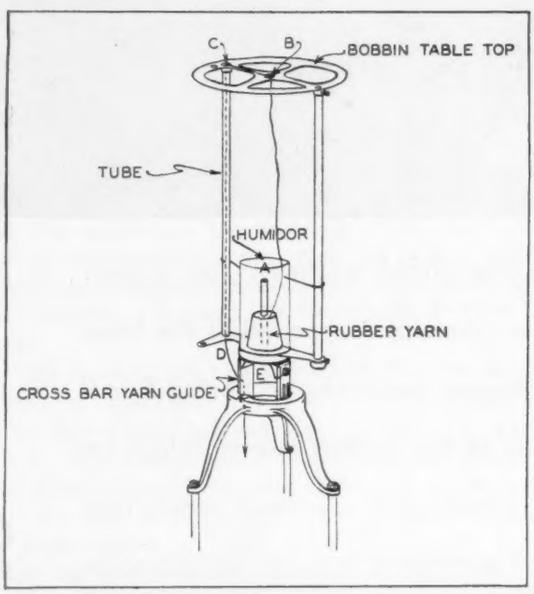
As a description to show how we here at our plant have adopted this rubber yarn for making rib tops for men's socks, the accompanying illustrations show the means we have used for controlling this rubber yarn from the time it leaves the cones until it gets to the needles.

We are making this rubber rib top on Brinton machines, 3¼x120x120 needles, using 7-36 cylinder needles and 9-42 dial needles, and using a two-finger yarn changer. This rib is made out of 36s/2 durene, knit 25 courses to the inch, 10 inches long, and the rubber top portion is one inch long, 36 courses to the inch, the welt being one-two course selvage.

The purpose of this extra length of rib is so that, when the rib is transferred to the knitter and the complete sock is made, this rubber top portion should fit above the calf of the leg, which eliminates the use of garters. We run this rubber yarn through a humidor as shown in the illustration. We find this prevents some of the kink and twist naturally accompanying this type of yarn.

CONTRIBUTOR No. 6070.




## Conditioning Silk for Full-Fashioned

EDITOR COTTON:

The smooth appearance of a full-fashioned stocking depends on many different factors, and one that is of utmost importance, and one which is often overlooked to a certain extent is that of conditioning the silk properly prior to knitting. There are many different processes and preparations used for yarn manufacturing which must be taken into consideration, such as soaking, spinning, twisting, and coning or winding—such as the open wind which absorbs much more moisture in the same length of time than the ordinary winding—also the changes of weather which take place almost daily make it essential that this process should be watched constantly.

Almost anyone connected with full-fashioned hosiery manufacturing has observed some time or another that on a damp or rainy day when the atmosphere is heavy with moisture, when a machine is in operation a light spray of water which is plainly visible, coming from the thread leaving the water troughs. This spray covers a good part of the section, and the stocking at times becomes so heavy that it will sag and touch the table, especially on service weight. This spray also causes more or less rust, which is injurious to the machinery.

During dry weather it has also been observed that some stockings become hard and rough and will knit much shorter, at times becoming so short that they will pull and break needles in the heel—which is mostly due to improper conditioning.

Many mills condition their silk by placing it in conditioning rooms, using a certain number of cones at one time, and when that supply is almost exhausted, they refill the room with a new supply without giving any thought to the fact that the first cones removed had probably not remained in the conditioning room long enough to absorb the proper amount of moisture and when half-used would become dry, while the last

*What does she think of your stockings?*

The ultimate test of value in needles is the consumer's approval of the fabric they produce. That we are America's largest producers of Spring-Beard Needles and that nearly all manufacturers of fine quality silk stockings are standardized on Royersford Needles is a tribute to customer satisfaction.

*The prescription for better knitting*

ROYERSFORD NEEDLE WORKS, INC., ROYERSFORD, PENNSYLVANIA

Southern Office: Provident Bldg., Chattanooga, Tenn. * Louis Hirsch Textile Machines, Inc., Special Representatives

# ROYERSFORD NEEDLES

ones removed would remain there many hours longer which is sometimes the cause of mouldy silk and often this condition becomes so bad that it is quite impossible to run it off without difficulty.

A very helpful way of preventing these difficulties by obtaining uniform conditioning is to replace a cone to be used with a new one immediately and using and replacing them in rotation so that the last one removed will not have absorbed any more moisture than the first one, thereby keeping in the conditioning room the same amount of cones at all times.

To determine the actual number of hours that the silk remains in the conditioning room, one can time five or six cones from the time they enter the room until they leave. Care should be taken that no more cones be removed from the conditioning room than are absolutely necessary to operate the machines, as operators who have access to the conditioning room will very often take more than they really need thereby causing much of the silk to dry up and produce a rough fabric.

On account of various speeds of machines the silk cannot be conditioned to the exact number of hours, but the difference will be slight. It is safe to add a few cones in the conditioning room to insure enough moisture being absorbed in case of emergency.

On damp days, when the temperature is very moist, it might be advisable to reduce immediately upon notice of change of temperature the amount of moisture entering the conditioning room and to increase it when the temperature becomes normal; also to increase during dry weather. This will eliminate much unnecessary rusting of the machinery and the work will have a better appearance.

CONTRIBUTOR No. 6237.

## Minimizing Crepy Stitches in Dyeing, Degumming and Finishing

EDITOR COTTON:

In a recent issue of COTTON "CONTRIBUTOR No. 6215" asked, "What is the best method of de-gumming, dyeing and finishing sheer hosiery to minimize crepy stitches and give a good hand and body to the stocking?" He pointed out that there is a prevailing custom, with fashion decreeing light weight sheer hosiery, to use a thread number lighter than that for which the gauge of the machine was originally designed, and that this aggravates the tendency of the machine to produce a sleazy fabric with distorted stitches, which he said could be improved according to the means and methods used in de-gumming, dyeing and finishing hosiery.

This communication is very interesting, his inquiry being of a nature that is very much up to the minute.

To turn a badly made piece of material into a perfect looking salable piece of merchandise surely is something to attract attention and worth looking into. That the dyer should be the one requested to improve the appearance of a fabric not made properly is not something new or unheard of. As a matter of fact, during nearly a half of a century spent in the dyehouse, I have been continually put on the grindstone to perform feats and find remedies for reclaiming inferior merchandise.

The best method of de-gumming, dyeing and finishing sheer hosiery to minimize crepy stitches and give a good hand and body to the stocking is something that no two dyers will answer in the same way. Take de-gumming, for instance. Some dyers will be partial to olive oil soap, swear by it, stick to it, and declare that it is the best de-gumming medium to be used, while others believe just as strongly that nothing can beat a good boil-off oil. Someone will say that for some goods soap is best and for some, boil-off oil is better.

Then, the matter of dyeing is also much discussed and we find devotees of de-gumming and dyeing in one and the same bath, while others get good results from and insist on dyeing hosiery in a fresh bath after de-gumming. After a number of years of dyeing hosiery, the writer has come to the conclusion that some goods could be dyed better in a soap bath while de-gumming them, but with others we could get better results by dyeing in a clean, second bath, and some hosiery has to be de-gummed, washed thoroughly and dyed in an acid bath to get the best results. This was not guess work nor a set opinion, but the result of experiments and the findings of a good many trials, also the determination of obtaining good results in spite of the quality of the goods sent to the dyehouse.

Then again, some dyer has stated that to get his hosiery boiled-off properly he had to boil them no less than two hours. We have known dyers to soak silk hosiery all night and finish boiling them off for one hour in the morning. They had good reasons for doing that and they got away with it. For years we boiled off our hosiery in from 25 minutes to three-quarters of an hour. Sheer hosiery should take no longer than that.

Now, in order to minimize crepy stitches and give a good hand and body to the sheerest stocking, the de-gumming, dyeing and finishing operations should be performed so that each successive operation is subject to the other and should be performed accordingly. Dyeing in the de-gumming bath may be all right for heavy goods that require no considerable amount of finishing compounds on them. Medium weight hosiery finished with some kind of gummy material should be dyed in a clean bath after de-gumming, to get the best results. When it comes to sheer hosiery that has been knitted with a thread smaller than that the gauge of the machine calls for, it must not be dyed in the de-gumming bath, or the finished hosiery will show all of the sleaziness and crepy stitches that the knitter has put in and also some that the dyer and boarders allowed to creep in. The dyed goods will have to be thoroughly washed in order to be able to absorb any great amount of sizing, filler and finishing material that is necessary to impart the fullness of hand and feel on this flimsily knitted hosiery. From a de-gumming and dyeing bath the goods can never be cleaned sufficiently of the soap or boil-off oil to allow of a good finishing job on the hosiery. This is not a theory, but the observation of many years of practical work.

(Continued on page 153.)

# The Audit Bureau of Circulations

## *Publisher's Statements and Audit Reports*

ADVERTISING has won for itself a place on this continent which it enjoys nowhere else and the advertiser and advertising agent and publisher members of the Audit Bureau of Circulations—and they comprise the dominating element in the advertising field of the United States and Canada—consider that this prosperity is based largely on the confidence fostered by this association.

National advertisers need deal with no publisher who fails to present a detailed and authentic survey of his circulation, bearing the stamp of the A. B. C., a stamp placed after impartial investigation. Most local advertisers are in the same position. The A. B. C. membership includes nearly fifteen hundred publications, circulating in every corner of the continent, north of the Rio Grande.

Through the A. B. C., a steady stream of circulation information is constantly flowing into the hands of advertisers and advertising agents. As of March 31 and September 30 each year, the newspaper members present sworn publisher's statements, giving their circulation statistics for the preceding six-month periods. The magazine, business paper and farm paper members present their semi-annual statements as of June 30 and December 31.

Seventy traveling auditors of the Bureau visit the publisher members once a year and examine the documentary evidence behind their circulation claims.

Audit reports present no opinions. They are based on documentary proof and are as accurate as it is humanly possible to make them.

With the semi-annual publisher's statements, checked and amplified by the annual audit reports, the advertiser can learn throughout the year fully and accurately just what A. B. C. publishers have to offer in the way of circulations when they solicit business.

**COTTON**

**1020 Grant Bldg. Atlanta, Georgia**

# THE KNIT GOODS MARKETS . .

**Written at Philadelphia, Pa., September 16, 1934.**

THE fixed or popular price for which department stores were responsible remains to plague them as does the return-of-goods evil and delivery of small packages at a cost which in many cases wipes out whatever profits may have been obtained from the sale of given articles delivered to customers' addresses.

Complaint has been heard in some of the large retail establishments that hosiery department managers are not showing the profits that formerly were earned in their various departments, and buyers admit that in many cases this is true. They attribute the truth of the criticism in large measure to the fixed price, the cost of returns of hosiery damaged by the customer (who of course is always right) and to delivery costs. Back of this, however, is the fact, admitted by hosiery buyers for the trade, that manufacturers have been compelled in many instances to increase the prices of certain hosiery items which some of the stores have been using as leaders, making a football or advertising medium of silk full-fashioned stockings.

The 59-cent stocking is still on the counters in some stores because it is displayed in the windows of others. Recently there was considerable exploitation of stockings priced 47 cents and 49 cents a pair, represented as perfect, picot top and re-inforced sole and heel. Even though such hosiery were obtained from some manufacturer in distress, with his bank pushing him for liquidation of his loan, it is doubtful that the stockings priced 47 cents should have been obtained for less than $4.25 per dozen. In fact, one very widely known buyer states that he was offered hosiery at $4.25 which he would not deign to put on his counters. This, however, is not the type of stocking displayed in another store at prices under a half dollar.

It was recalled by one of the more important department store hosiery buyers that in 1933 he was able to show very large profits, for the reason that he stocked up heavily before the NRA became effective, resulting in increases in prices that were inescapable. Those who did not take Washington at its word that prices would advance, and therefore neglected to anticipate their requirements, were unable to show satisfactory profits last year. It is recalled, however, that some buyers who did not pass under the wire in advance of NRA becoming effective, did eventually, along in November and December, fill up their stocks at lower prices than prevailed in August when some of the stores were buying under pressure of steam roller salesmen. But in the interim they had to buy in the open market at the July-August prices plus. Selling in competition with those who had escaped the plus, buyers thus affected have been representing that while prices in September this year were low—ridiculously so—they were ordering very conservatively, uncertain of the outcome of the then labor disputes and the eventual effect on the consuming public in relation to purchasing power.

## Buyers Placing Duplicate Orders

There has been a fair volume of advance buying of hosiery, and it is the prediction of some department managers that those who are not taking advantage of the stagnant market conditions will have headaches later on, in the event the strike be a prolonged one or manufacturers return to the policy of producing only against orders, as a means for remedying conditions which have brought about selling at less than value.

It is suspected in the trade that some shrewd buyers have been placing orders in duplicate or triplicate, with each of several mills, a precaution which was taken during the World War scarcity of goods and left a great many of the more seasoned manufacturers determined not to be caught again at that practice. In fact, in a comparison of notes by manufacturers in a recent group gathering, it was disclosed that two mills in Philadelphia and one in the suburbs had received identical orders from the same distributor among retailers. Of course, if the strike drags along and hosiery deliveries become uncertain, shipments against all of the orders under such circumstances will be gladly accepted, while if a vestige of the September congestion remains, some, possibly all, may be cancelled.

The provision of codes prohibiting the shipment of goods on consignment is regarded as one of the better features of these instruments in dealing with fair trade practices. Numbers of mills—even one or more of the large concerns selling under their nationally advertised brands—for some time prior to the advent of the Blue Eagle were shipping hosiery for the higher priced brackets on consignment to large stores of whose credit there was no question. It is recalled in the trade that some time before consigned shipments were banned, the buyer for a widely known retailing establishment won the favor of his principals by having arranged for deliveries of considerable hosiery to be returned to the manufacturers in the event that, due to market conditions not then conceivable, the goods might be returned to the shipper. This store was fairly well loaded with consigned goods when first the Blue Eagle appeared on the scene, and the store was left with goods that had to be sacrificed because its popular price brackets were too low for that class of merchandise.

## Shipping on Consignment

The shipping of goods on consignment came to be recognized in the trade as no less an evil, so far as related to shippers, than the return or exchange of goods, in pursuance of a policy established in the earlier days of large department stores when competition began to be keenly felt. It was believed in September that stores advising their customers that those who had accounts with the establishment would not have to pay their September bills before November were taking a long chance. Some of the accounts taking advantage of this privilege will, it was predicted, be lost to the stores by reason of proving uncollectible. Furthermore, it was pointed out, the purchase of goods in September and October, suitable for holiday gifts, that need not be paid for until November, might cut rather deeply into the December holiday buying by a considerable shopping element.

## Do Women Buy Half-Hose on Price?

Do women, when buying half-hose for the male members of the household, permit themselves to be influenced by price, or by fancy, to the exclusion of quality? This question was made the subject of a survey recently in a department store in which most of the buying, in all of the departments, is by women—men's clothing excepted.

Pure silk guaranteed half-hose were displayed on an aisle table at 29 cents a pair, "every pair guaranteed to give the wearer satisfactory wear in every particular, and out-wear any other silk socks you've ever worn," etc. They were described as 12-thread, firmly knit, pure silk, 6-thread mercerized lisle split soles and 8-thread mercerized lisle snubber toes and snubber heels. This stocking recently was selling regularly in the same store at 50 cents a pair. It appears there was no scarcity of pure thread silk socks, of seamless construction, for the store in question seemed to have them in abundance for the 29-cent promotion sale price.

On an immediately adjoining table there was displayed, but not conspicuously placarded, rayon-mixture half-hose at 27 cents a pair, representing a variety of construction, but in no particular the equal of the 29-cent silk socks for durability. Observers at the two tables noted that almost invariably the buyers at the 27-cent counters were four to one in proportion to those at the 29-cent counter.

The department manager who called attention to the preference of the women for the cheaper sock said he was unable to say whether the shoppers were influenced by pattern or by a difference of two cents in price in the preference of the rayon combinations as against the pure thread silk. He thought, however, price had something to do with it, yet admitting that it is easier to sell fancies, even when men are doing the buying, than to sell the plain colors.

## Latest Developments on "Ringless" Hosiery

Some of the hosiery department heads look for the advent of the ringless stocking to afford some relief from the price situation, and point to the fact that the John Wanamaker Store in Philadelphia recently displayed a gossamer-

# Achievement . . .

*"Achievement is not the outcome of chance; it is earned through years of fidelity to principle."*
*(From the book "Standards of Business" by Elwood E. Rice, LL.D.)*

FOUR hundred and forty-one years have passed since Columbus discovered a New World. Few greater achievements, or more inspiring examples of indomitable perseverance, grace the world's history. With his splendid idea ever before him, that intrepid navigator sailed on and on, through the stress and storm of uncharted seas, until at last Achievement crowned him with undying fame. His was a life in which courage and determination rose triumphant over difficulties and discouragement.

In these less romantic days, achievement of success is still hard to gain.

But unswerving faith in the ideals of Quality and Service has built a world-wide trade for "B&C" yarns.

The quality of these fine yarns is not brought about by mere chance, but by careful planning from the selection of the raw cotton to the finished yarn. This is all made possible by the fact that all operations are under the one management, the spinning of the yarn being done at our mills at Lincolnton, N. C., while the mercerizing, dyeing and bleaching is done at our Philadelphia mill. This enables us to control at all times the quality of our yarns.

Start soon to use these fine yarns.

---

**BOGER & CRAWFORD**

*Philadelphia*

**Chattanooga, Tenn.** **Lincolnton, N. C.** **Chicago, Ill.**

like stocking absolutely free from marks and shadows, at $1.35 a pair. It was believed at the time that this was the highest price any of the department stores in eastern cities had the temerity to put on even so fine a stocking as this ringless "film of silk".

In a woman's ready-to-wear shop ranking as one of the more exclusive in its group $1 was the maximum price asked for ringless hosiery. Still another retailer in the shopping center of Philadelphia had a price of 79 cents, which the establishment heralded as the lowest price at which a ringless stocking, comparable in quality and general characteristics, had been offered. A few doors away, however, what appeared to be very good grade stockings were tagged 69 cents. Thus it was made to appear in an hour's shopping tour that prices for ringless hosiery in Philadelphia ranged from 69 cents to $1.35 a pair, notwithstanding this type of stocking has been barely introduced to the shopping public.

The ringless stocking is a feature item, in the opinion of one of the more successful department store hosiery buyers, who suggests, however, that it will be subject to no less price competition than the conventional type. He fears that it will be impossible to keep in line manufacturers not operating under a royalty with those licensed by the Textile Patents Corporation. In other words, he already has visions of offerings of "bootleg" hosiery. It is a question in the trade whether the use of the three-carrier device covered by the Kaufman patent can be used by unlicensed manufacturers without laying themselves open to a charge of infringement.

While hosiery manufacturers—many of them—profess to be guided largely in their production campaign by the monthly statistics supplied by the Department of Commerce as compiled from reports from mills, a small group of large concerns in September completed a survey of the full-fashioned industry for ascertaining what might happen to the industry in the event that a strike be called against all mills. While it cannot be said with precision just what the survey disclosed, it is stated by a person obtaining his information directly from the sponsor of the inquiry that, according to replies received by manufacturers from their employees, it appeared it would be possible to maintain a 90 per cent production as compared with the then output. It was reported in a summarization of the replies from mills that knitters as a whole were receiving an average of $42 per week—some drawing more and others receiving less, depending upon the ability of the knitter and the extent to which curtailment was being observed in the various mills.

One manufacturer taking a prominent part in the survey states that he called his operatives into the office in groups of five and had each group select its spokesman. In this manner, the entire working force of the mill is said to have been queried, with the result that 90 per cent were opposed to quitting work in support of the then general movement for a reduction in hours and increases in wages. It is stated that in each case the operatives volunteered the information in the absence of any pressure or coercion from their employers.

Comparing the result of the survey referred to with the report of the Department of Commerce for July, it appeared that 90 per cent production might be really more than was necessary to keep the market supplied, unless there be increased demand, of which there is little doubt. The point is made that if the women's wardrobes are as scant of hosiery as the average retail store shelves are bare of it, then there is a vacuum to be filled this fall and winter—a deficit that could not be taken care of promptly by any surplus stocks in the hands of manufacturers.

The July statistics from the Department of Commerce, covering reports from 272 identical establishments representing 329 mills, show stocks on hand at the end of the month amounting to 10,598,449 dozens, compared with 7,762,144 dozens at the end of the corresponding month of 1933. There was an increase in stocks of 1½ million dozen pairs in women's seamless, approximately one million dozens of the women's full-fashioned and a little over ¼ million dozens in the classification boys', misses' and children's.

The increase of 2,836,305 dozens, all kinds, notwithstanding a decrease of 1,769,659 dozens, is readily accounted for in the declines in net shipments during the month and unfilled orders at the end of the month, shipments falling off by 2,255,314 dozens and unfilled orders showing a decline of 1,810,262 dozens. Thus is presented the question, assuming that reports for months since July do not improve the showing, is the market ready for an increase in prices?

It seems noteworthy, in comparing the July production of 1934 and 1933 that output of cotton hosiery, all classes, including mercerized, declined this year by more than one million dozens, men's seamless falling back by around three hundred thousand, women's cotton full-fashioned by 13,000 dozens—from 15,916 to 2,437—while women's seamless stockings dropped back by 174,204 dozen. The classification boys', misses' and children's was off by around 50 per cent and infants' in like proportion.

Women's silk seamless about held their own, while women's silk full-fashioned dropped back by around 125,000 dozens. Women's full-fashioned rayon scored a production of only 7,777 dozens, compared with 22,043 in July last year, while women's seamless rayon dropped from 177,053 to 73,052 dozens. All comparisons of July this year with last year are more bearish sentimentally than a comparison of statistics for July this year and the previous month.

## The "Ringless" Patent Situation

The process of unscrambling indicated complications in the peaceful exploitation of ringless hosiery, or rather bringing manufacturers together for protected production and merchandising of this type of stocking, appears to have reached a stage where it seems safe to say that the Textile Patents Corporation has matters so well in hand that a definite statement from the attorney and vice-president may be expected soon, perhaps in advance of the next issue of COTTON.

As may be commonly known in the trade, the Textile Patents Corporation controls the rights vested under the Kaufman patent for the knitting of women's full-fashioned hosiery by means of the three-carrier attachment, and has a number of applications for license to manufacture ringless hosiery on a royalty basis. At this writing, no licenses have been issued, as final details in the program for a general licensing have not been fully acted upon by the management. This delay may be attributed to the fact that there sprang up a somewhat powerful group of manufacturers which took exception to some of the provisions in the form of agreement under which licenses are to be issued. This group is headed by one of the larger concerns selling its production under nationally known brands, and the name of the Gotham Silk Hosiery Co., Inc., has been conspicuous in reference to this group, which for want of a better distingulshing name has become known as the "Outer Patent Group".

Many conferences have been held by representatives of Textile Patents Corporation and the several manufacturers constituting the outer patents group, with the result that the last available official account made it seem evident that either this group and the Textile Patents Corporation will have composed their differences or were at the parting of the ways. The outer patents group insisted upon a royalty of only 5 cents a dozen and a dealer classification differing from that provided for in the royalty agreements.

Notwithstanding the vexatious delays, of which there has been considerable mention in public print, the Textile Patents Corporation states it has received many suggestions and criticisms from persons, firms and corporations representative of the entire hosiery trade; that it has attended a number of committee meetings representing groups of working mills, and as a result of the study of the information thus acquired finds, it states, that "it has been positively proven to the officials of the corporation, as well as to the owner of the ringless patent, that the basic conditions of the licensing are sound and conducive to the obtaining of the many objectives sought for the betterment of the trade".

Dwelling on the fact that there always has existed and probably will continue to exist, conflicts growing out of activities of the mills selling their product under controlled brands and those mills which do not employ brands, and that there is a conflict ever present among the jobbers, chain stores and single-unit retailers, the corporation states it has been able to formulate a program under which the several conflicting interests will be equitably taken care of in the matter of producing and merchandising under a species of protection for all. The owner of the patent also demanded and has been assured of conditions protective of his interests.

It is pointed out in a statement of the corporation that the branded hosiery mills negotiating with the Textile Patents Corporation, held out for conditions which it was said conflicted with the activities of the unbranded mills, and vice versa. The friction in respect to the conflicting de-

# SPOT-PROOF HOSIERY

• **WILL YOU** answer this insistent feminine appeal for a water repellent . ."splash-proof finished" hose?

• **AQUAROL** *makes* hosiery "splash-proof." Apply it after dyeing, for a five minute run in a fresh water bath at room temperature.

• **AQUAROL** causes a greater yarn elasticity, and so increases the length of the finished hose. Ultimate washings in a mild soap solution tend to prolong—even *increase* the water repellent quality.

LET US TELL YOU MORE ABOUT

# AQUAROL

Keystone View

ARKANSAS CO·INC· 233 BROADWAY NEW YORK CITY

mands was thought to have been pretty well smoothed out, through the terms of the license agreement.

### The "Outer Patents" Ringless Group

Another question on which there was a liability of the corporation and the outer patent groups splitting was the classification of chain stores in relation to jobbers and retailers. The corporation states it has been definitely decided that the jobber shall be fully protected and the "genuine" retailers also shall be fully protected also in their merchandising. It is understood that chain stores are to be classed as retailers. This of course was not to the liking of manufacturers selling to chain store organizations, which ordinarily in the past have been able to buy on as advantageous terms as most jobbers. The corporation has taken a stand on the matter of classifying chain stores and buying syndicates and states that it is prepared to meet the opposition incurred, in the full interest of those who enter into the licensing agreement, whom the corporation "intends to protect, from a patent standpoint".

It is stated that the Textile Patents Corporation has in its possession "convincing information that the validity of the patents will be upheld by the courts", and it is stated further that "any individual, firm or corporation endeavoring to interfere with the carrying out of the elaborate program of the Textile Patents Corporation will be absolutely refused a license, and that when the validity of the patent has been proved, damages and profits will be collected, and mills not possessing a license will be immediately stopped from further manufacture and sale of hosiery made in accordance with the patented inventions".

Pressure is said to have been brought on the Textile Patents Corporation for restricting the granting of licenses to relatively few mills, on the ground that this would assure the mills, operating at capacity, particularly in view of the proposal that a large element of wholesalers and retailers is expected to refuse to buy infringing merchandise. The Textile Patents Corporation, it is stated, objects to any such restrictions unless driven into an arrangement of that character. Genuine, non-infringing ringless stockings made in accordance with the Kaufman patent will, it is stated, be identified by the patent number 1,969,307 and the license number of the individual manufacturers, as proof of the stockings being of the true patented three-carrier ringless type.

### The Underwear Situation

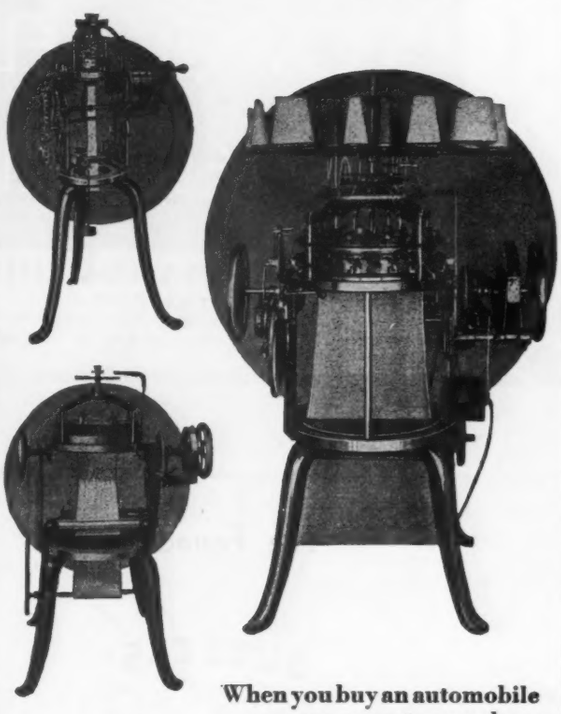
Threatened disturbance in the underwear industry following the inauguration of the cotton-textile strike at once intensified retailer interest in men's heavyweight cotton ribs. By the time the last underwear mill in the Utica, N. Y., area was closed down early in September, there was an insistent call from retailers for deliveries such as had not been known in some years. Meanwhile, a fair amount of business in women's and children's cotton underwear had been written and goods delivered against a considerable part of the orders, it was stated by manufacturers in upstate Pennsylvania, where there remains a number of manufacturing centers, a good size remnant of a one time popular industry in that section of the Schuylkill Valley. Many mills, once prosperous, passed on during the first two years of the depression, following some that had succumbed to competition in which southern concerns were conspicuous. The city of Reading lost some of its underwear mills in the shifting of industrial units, and the Royersford-Spring City sector fared no better.

The retail trade is reported having placed relatively few orders in the past month, this attitude being more clearly defined, of course, in industrial centers. Department stores, whose business was affected by climatic changes, were said in the trade to be pursuing a most conservative policy in the matter of repeating. Some said they would buy no more underwear until they sold what they had.

As a seasonal staple, medium weight cottons for women and children were for a time in slow movement. While buyers were delaying, cotton yarns were scoring modest price advances. The price of yarn, however, was not so much a question with manufacturers as orders. The semi-rural sections were feeling the pinch of increased unemployment in mills which ordinarily in former years were under pressure for their output at the dawn of fall.

Although retailers suddenly became interested in having deliveries of winter weight underwear come forward, the average were keeping the incoming and outgoing so well balanced that they were regarded as at no time in danger of a surplus of stock in the event winter prove less severe


MODERNIZE *your* PLANT *with* BRINTONS



*Ribbers* of every type.

*Jersey Machines* Plain and Fancy Stitches.

*Rib Body Machines* For Underwear and Bathing Suits.

*Sweater Machines* Rib and Jersey Types.

*Special Knitting Machines* From ¼ inch to 36 inches.

When you buy an automobile —you are sure to purchase a car with a proud performance record. Why not apply the same excellent logic when you equip your mill with knitting machines? The name Brinton stands as high in its field, as Rolls-Royce, Packard, and Cadillac in the automotive industry.

*Depend on Brintons*

H. BRINTON COMPANY

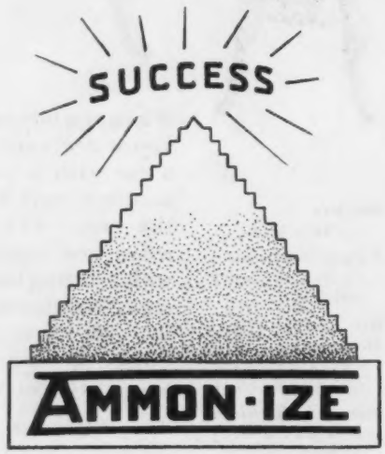
3700 Kensington Ave., Phila.

*New York Office:* 366 Broadway

BRINTON CIRCULAR KNITTING MACHINES

of EVERY Kind for EVERY Purpose

The Foundation




CONTROL YOUR MILL

Know the workmanship is perfect.
Test the entire stocking for strength.
The wearer likes it better if size is correct.

Make the wearer want your stockings again.

Write

Edward R. Ammon, Inc.,
Reading,
Penna.

than forecasters have predicted. Orders from the stores, large and small, increased on sudden climatic changes downward and faded away under rising temperatures. "We can almost tell by the size and character of orders if the weather in our northern territory is balmy and warm or cold and blustery," observed the department manager of a well known jobbing house whose salesmen cover national territory.

Measured in units, the underwear distributor continued, there has been placed a fair amount of underwear business, but, it was stated, the clamor is mostly for sub-standard numbers or, in any event, goods at a price that will enable dealers to stick to last season's prices to the consumer," said a representative of a mill selling direct to much of the more important retail trade. "I had commenced to flatter myself that we had persuaded our trade to forget what they call popular prices," he said further, "but find that is going to be a difficult matter. Popular prices were all right so long as they showed a fair margin of profit. Our trade will have to get a few cents more per garment this season or manage to get along with a shorter markup than last season," the underwear mill representative believed, unless there shall be a reduction in the cost of plant operation and marketing. It is pointed out that the processing tax on cotton alone adds more than 50 cents a dozen to 12-pound union suits. A further increase is ascribed to curtailed production. Manufacturers nevertheless regard the September signs of a fair winter business auspicious.

## Differential Fixing Strikes a Snag

One of several stumbling blocks to be overcome in establishing prices to be accorded jobbers by manufacturers selling also to retailers is a differential on which there must be a three-sided accord. This was brought to the fore recently when the National Retail Dry Goods Association objected strenuously to the manner in which hearings were held at the headquarters of the Wholesale Dry Goods Code Authority. Objections were registered because it had been believed the hearing was to be conducted under the NRA The Underwear Institute could not take a definite stand in the matter of differential, it was stated in a letter of Roy Cheney, managing director of the institute; that a large number of manufacturers would not attend the hearing for the reason they wanted to avoid antagonizing their customers.

The secretary-treasurer of the wholesale institute submitted statistics intended to show that the average expense for wholesalers was more than 15 per cent of net sales: that sales and administration expenses of manufacturers selling to jobbers was 7.18 per cent, compared with 16.64 per cent for manufacturers selling to retailers. A representative of the resident buyers' group declared the proposed wholesale differential was a move to put the resident buyers out of business.

In the case of ringless hosiery the differential for jobbers was set by the Textile Patents Corporation, which controls all rights under the patent for the three-carrier attachment to full-fashioned machines knitting the ringless type. In this instance manufacturers selling retailers and jobbers are to receive a maximum price of $6.35 a dozen from retailers and $5.75 from jobbers. A group of manufacturers not in harmony with the Textile Patents Corporation wants assurance that jobbers will not undersell manufacturers supplying retailers. Another illustration of the difficulty of fixing by code the prices at which goods are to be sold.

## The Outerwear Markets

Ribbed sweaters for men and women have enjoyed fairly wide distribution despite a cloud of uncertainty hanging over the trade as to how long mills might be in operation for seasonal delivery. A strike declaration was left with a committee of a knitting trade labor union, but there was given no official intimation as to when, if at all, an order to operatives to walk out might be forthcoming. Plants were kept going in conservative fashion, commencing with late August, and manufacturers of moderate priced ribbed lines boasted of a fair amount of business being offered, mostly for spot and nearby delivery. Business was less brisk in the higher price garments of pure worsted than in lines in which there is an admixture of cotton. In fact, there was enough activity in merino numbers to keep some of the manufacturers of wool-cotton yarns right well engaged until spinners' plants were closed around the middle of September by walkouts from establishments where, par-

BEST & CO.

☆ HIGHLIGHTS ☆

ENKA

MUFFLER WEAVE DRESSES

These two unusual frocks are being featured by Best & Co., New York, and are advertised in the New Yorker Magazine of September 8th. Made by Townley Frocks, they embody the newest and most wearable points of the fall mode. The fabric, a new Muffler Weave, woven entirely of Enka rayon yarn, is high style news too—with its stiffish body and soft glowing satin stripes.

These Muffler Weaves, woven by Jacobson-Son, Inc., are a worthy addition to the increasing list of fashion hits woven of Enka rayon yarn. On the fashion thoroughfares of the country, retailers are featuring frocks in which Enka rayon is used.

AMERICAN ENKA CORPORATION

ENKA, N. C. • 271 CHURCH STREET, NEW YORK • PROVIDENCE, R. I.

# QUITEX
## SPUN RAYON

We have been spinning rayon for several years and have established a reputation that meets the most exacting buyer. Quitex Spun Rayon has a fashionable dull lustre and unusual strength—imparting to fabrics a new sales appeal.

There are many ways in which you may use Quitex to advantage in your textiles. Profitable results are assured with the Quissett reputation behind it.

*Let us send you samples of Quitex Spun Rayon.*

We are also spinners of combed and carded yarn, all numbers, and put up.

QUISSETT MEANS QUALITY

**Quissett Mill**
**New Bedford, Mass.**

Wm. M. Butler, Pres.
Edward H. Cook, Treas.
Thomas F. Glennon, Agent.

# You will want these
# Production Advantages
# on your Reading Machines

•

Water-Cooled Friction Shaft

•

Camshaft Air Brake

•

Half-Speed Shock Absorber

•

Balancing Cams

•

*Write for Particulars*

## TEXTILE MACHINE WORKS
READING • PENNSYLVANIA

ticularly, there was recourse to mass picketing.

Although production of sweaters for fall and winter had been sharply reduced, there appeared no lack of low price coats for promotion sales, in which it appeared possibility of a sweater famine was disregarded, for prices were inadequate, even as to the more cheaply made garments. But it soon became evident that there were not many lots and no large ones, of distress sweater coats to be picked up, for a sudden drop in temperature around the middle of September put an end, for the time, to the exploitation of distress prices and caused a stir in demand.

Sweater mills this fall are using relatively less of zephyr yarns, the trend being apparently to equally serviceable but less costly yarns. Manufacturers were confronted with the problem of deliveries of dyed yarns, as numbers of the dyeing establishments, notably in the New England and Philadelphia sectors, were either idle or crippled by walkouts. Thus it was seen a possibility of plain colors prevailing during the fall and winter to the perhaps utter exclusion of color designs, as, it appeared, manufacturers might find themselves in a position where they would have to take what spinners and dyers had to offer, or get along without any selections.

There has been some attempt at sampling bathing suits for the 1935 seasons, but it is almost a certainty that in view of industrial conditions, an opening will not be planned for earlier than January. And so long as worsted yarns remain an uncertainty as to deliveries, colors and price, few manufacturers will show their 1935 models until forced by necessity to come to market in order to make a start with production in good season for the winter resort trade. While manufacturers profess to believe that only a very small per cent of the help would heed a strike order, they are taking no unnecessary step that might disturb men and management relations.

## Minimizing Crepy Stitches

(Continued from page 143.)

To believe that a part of the sericin or silk gum can be left on the hosiery by de-gumming and dyeing in the same bath, as is asserted by some advisers, is a mistake. Silk goods are either de-gummed or they are not de-gummed. Partial de-gumming is a myth and will not stand investigation. If part of the gum is left on the goods it will be found that it is invariably there in spots and the hosiery that has it will show it in soft and hard places, the reinforcement and hard knitted parts of the stocking will be harder and more unyielding than is desirable and the general appearance of the hosiery will be found to be far from satisfactory. Partial de-gumming cannot be done on silk of any kind except perhaps in the laboratory or in a beaker.

The best method then can be boiled down to this:

Boil off the hosiery thoroughly and wash it good.

Dye in a clean bath with Glauber's salt, and add a small percentage of acetic acid or formic acid at the end of the dyeing to neutralize the last trace of alkali on the goods, in order to have them thoroughly clean and prepared to absorb any amount of sizing, filler, and finishing compounds necessary to do a good job.

Leave the goods in the finishing bath long enough, with enough finishing materials, to increase the weight of the fiber and to have it penetrate evenly throughout all of the hosiery.

With these simple instructions adhered to, an experienced man to select soap, oil, dyestuffs and finishing materials, and a good man to apply them—this contributor or any other man interested in improving the finish on hosiery should find it easy to make a presentable job out of the worst kind of knitted hosiery made.

CONTRIBUTOR NO. 6220.

"Brosco" Silk Finishes

"Brosco" Dull Finish
Finishing Compound S. P.
"Brosco" Scroop Oil

—give to Hosiery "any desired degree" of Low Lustre, Water and Spot-Proofing, Softness and Elasticity—and with only ONE bath. They are fixed on the fibre and withstand repeated washings. May we send you further details or have one of our practical men call?

"Brosco" Finishes are the result of 27 years' experience. *Note:* The name "Brosco" is registered in U. S. A. and Canada.

"Brosco Products"
SCHOLLER BROS. INC.
MFGRS. of TEXTILE SOAPS, SOFTENERS, SULPHONATED OILS & SPECIALTIES
AMBER and WESTMORELAND STS., PHILADELPHIA, PA.
and in ST. CATHARINES, ONTARIO, CANADA

AVONDALE MILLS

Sycamore, Ala. — Sylacauga, Ala.

OFFER THE ADVANTAGES OF LARGE FACILITIES — QUICK SERVICE

THEY CAN READILY SUPPLY ANY TWIST, PLY, OR PUT-UP IN CARDED OR DOUBLE CARDED YARNS FOR KNITTING, WEAVING OR INSULATING IN ALL NUMBERS FROM 3's TO 40's.

*Selling Agents:*

WATERMAN, CURRIER & CO.
INCORPORATED

BOSTON CHARLOTTE NEW YORK
PHILADELPHIA CHATTANOOGA

# REVIEW OF THE YARN MARKET

**Philadelphia, Pa., September 17, 1934.**

THE markets for cotton, worsted and woolen yarns were so completely demoralized during the past two weeks by the spread and then an indicated waning, of the cotton textiles industries strike that prices obtained were no index of values, nor were the bare yarn bins in mills and merchant warehouses an indication of inability to obtain prompt deliveries. It was, of course, a situation without precedent.

Although a general shutting down of cotton mills was looked for from the day that the strike call was issued, there appears to have been little or no preparation for it in the way of stocking yarns for an emergency such as would have arisen but for the number of textile mill workers who left their jobs and machinery idle under intimidation.

Cotton yarn prices had become fairly steady on a basis of 28½ cents to 29 cents for average good quality 10s single carded on cones, with high grade ruling a cent higher. Prices hardened with the near approach of the strike, and sellers felt an opportunity was presented for obtaining more nearly value based on actual cost. But asking figures weakened slightly during the first week of the struggle, when it became apparent that yarn consuming mills were not anticipating the extent that had been looked for.

In the Philadelphia markets, weaving yarns were harder hit by the closing of mills, voluntarily in instances to escape disturbance by reason of picketing, than were knitting numbers.

Manufacturers locating a few cases of yarn, after a deal of shopping around, seemed to be surprised at the tenacity with which dealers held to their asking prices. Twelve cents was offered today for 12s single carded on cones and declined. Bids for other counts on the same basis also were not accepted. For once, dealers were not to be budged from their ruling quotations. During the more critical period from the standpoint of production by southern spinners, no idleness of mills in the Philadelphia sales territory due to lack of yarns of any class or description was reported.

When, this week, more of the spinners in the South were in production there appeared a disposition of some local and nearby manufacturers to wait for price declines, in expectation of being able to do some buying on a speculative basis. It was pointed out that, while yarn production doubtless would be materially increased, there was no indication of any general resumption of activity in mills here at that time idle or badly crippled. There was seen a probability of numbers of workers returning to their jobs they had vacated, and therefore a likelihood of more active machinery. This was a development that promised at the time to stir manufacturer interest in carded and combed yarns to an extent that freer offerings by spinners might perhaps be speedily absorbed.

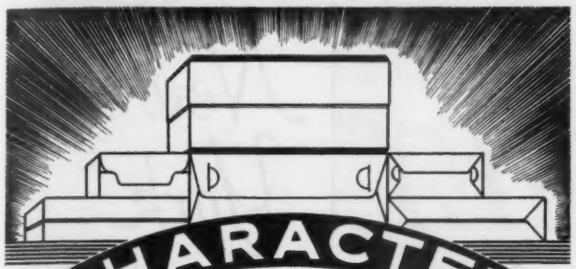
Two underwear mills in the Philadelphia area which are rated large consumers of carded and combed yarns folded up during the second week of strike activity in this section. The loss of underwear patronage for the time simultaneously with the closing of a number of seamless hosiery mills, gave the local market a definite setback so far as pertained to sales volume. The trade was, however, practically a unit in predicting that in the event the strike be continued until the end of September there will have been created such a vacuum in the goods markets that demand for yarns will make price advances inescapable.

Combed yarns were said to have been draggy even before the strike call became effective, and since have lost more ground than carded. Only incidentally were prices referred to after a week to ten days in which manufacturers were dealing with cold facts in strike matters. The straggling sales since the commencement of real trouble have been consummated on terms known to only buyers and sellers. This is true also of mercerized yarns, in which there was a tapering of interest until inquiries became so rare as to cause a flurry when occasionally some manufacturer wanted to get a line on prices and deliveries.

Until at the beginning of September, quotations on mercerized ply yarns were on a basis of 68 to 72 cents for 60s, sales at 70 cents being reported during a short period of a stiffening in values. Sales fell off as the number of active underwear and hosiery mills diminished, orders continuing to be received from full-fashioned hosiery manufacturers, however. Such orders could be filled from stocks, which were gradually reduced as the strike progressed, with all mercerizing plants in and near Philadelphia seriously affected.

### Woolen and Worsted

The principal collapse in yarns was experienced by the worsted and woolen spinners. During the process of reducing stocks while the market was dragging and of uncertain future, spinners sold in a competitive market and accepted prices below wool parity. There remained however, ample stocks of yarns for the knitted outerwear trade, and prices this week were at their bottom for the year, with 2/20s, quarter blood, available at 92½ cents compared with $1.30 as the peak at the time when, last fall, prices commenced tumbling. Single 15½s, colors, were quoted today at $1.10, on the prospective eve of a strike in the sweater and bathing suit mills, being ordered effective this week. To that time, knitting mills were taking small lots of spot yarns, covering for orders only. Yarns for men's wear piece goods, woolen and worsted, dropped out of demand while knitting mills still were doing some buying, and spinners doubted that with the light weight production season far spent, they will have much more than a half of the normal output.




The basic construction of Old Dominion paper boxes—whether of the folding or set-up type—bespeaks a character and comeliness that can come only through long experience and sincere effort to give all box users the most for their money.

Write for samples, prices.

**OLD DOMINION BOX CO., Inc.**
LYNCHBURG, VA.

Winston-Salem, N. C. Burlington, N. C. Charlotte, N. C. Asheboro, N. C.

**OLD DOMINION PAPER BOXES**

SPECIFY *Laurel* PRODUCTS For **COTTON** BLEACHING DYEING FINISHING

Laurel Brand Kier Oils and compounds assist in producing better whites by removing cotton waxes, oil stains, and foreign particles from the goods. Preparations for wetting out and penetrating, assisting in bleaching and dyeing. Softeners, gums and prepared products for finishing of cotton piece goods.

● ● ● ●

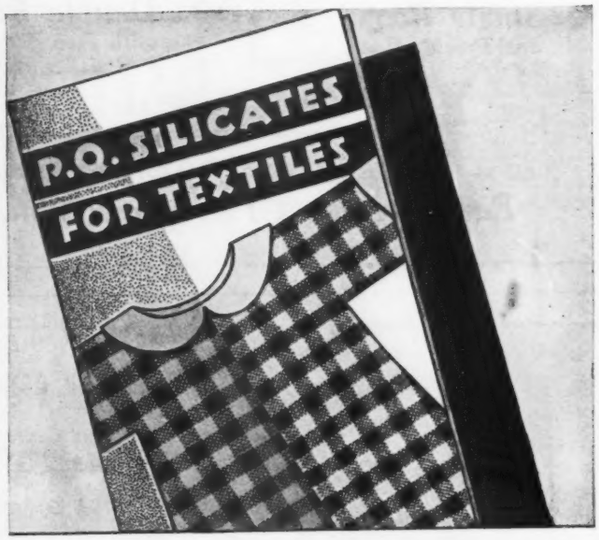
Laurel products will help you secure better processing results. Each one has been developed to fit the process and the fiber. Let our Laboratory assist you in your problems.

**LAUREL SOAP MFG. CO., Inc.**
WM. H. BERTOLET & SONS
2600 TIOGA STREET, PHILADELPHIA, PA.
Warehouse Stocks at: Paterson, N. J., Chattanooga, Tenn., Charlotte, N. C.

**NOW**

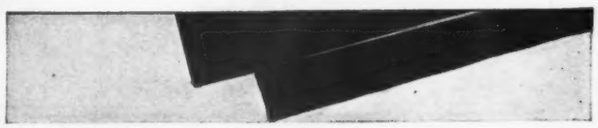
FIDELITY MACHINE COMPANY-PHILADELPHIA-PA.

IS THE TIME TO LET US TELL YOU ABOUT THE MOST MODERN BRAIDING MACHINES AVAILABLE FOR MAKING SHOE LACES, WICKS, FOR CANDLES, NARROW TAPES, FISH LINES, ROUND AND FLAT ELASTIC BRAIDS, TUBE COVERINGS, PACKINGS.




**HAVE YOU A COPY OF THIS BOOKLET?**

It reviews textile processes such as kier boiling, scouring rayon, bleaching, discharge printing, silk weighting. Request it today. No obligation. Philadelphia Quartz Co., 125 S. Third St., Phila.



The famous bone-dry, unshrinkable, well finished boards that give universal satisfaction.

Especially recommended for silk and chiffon hosiery. Satisfied users the country over. A list of these users gladly furnished to any mill on request.

**JOSEPH T. PEARSON & SONS CO.**
Kensington & E. Boston Aves., Philadelphia, Pa.

# The VANDERBILT Hotel

New York City

## Visitors

*always enjoy its Atmosphere of Friendliness and Charm and its Air of Distinction as well as its Excellent Cooking and Exceptional Service . . . . Its Convenient Location, its Nearness to Railway Terminals, Shopping District, Theatres, make it the*

*"Handiest" Stopping-place in New York*

*To these Attractions add*

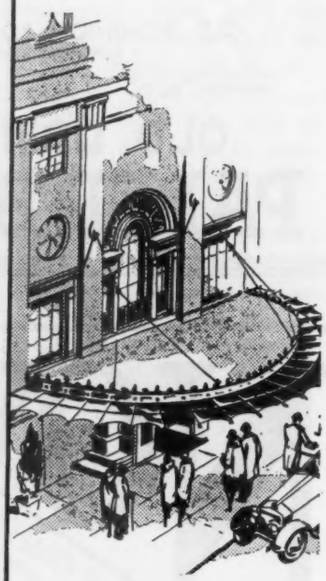
REMARKABLY LOW RATES

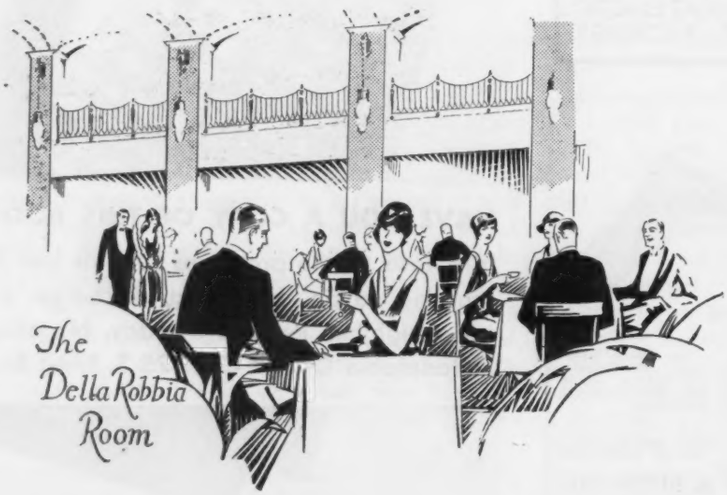
*Single Room and Private Bath* $3.00 *Double Room with Two Beds and Private Bath* $5.00

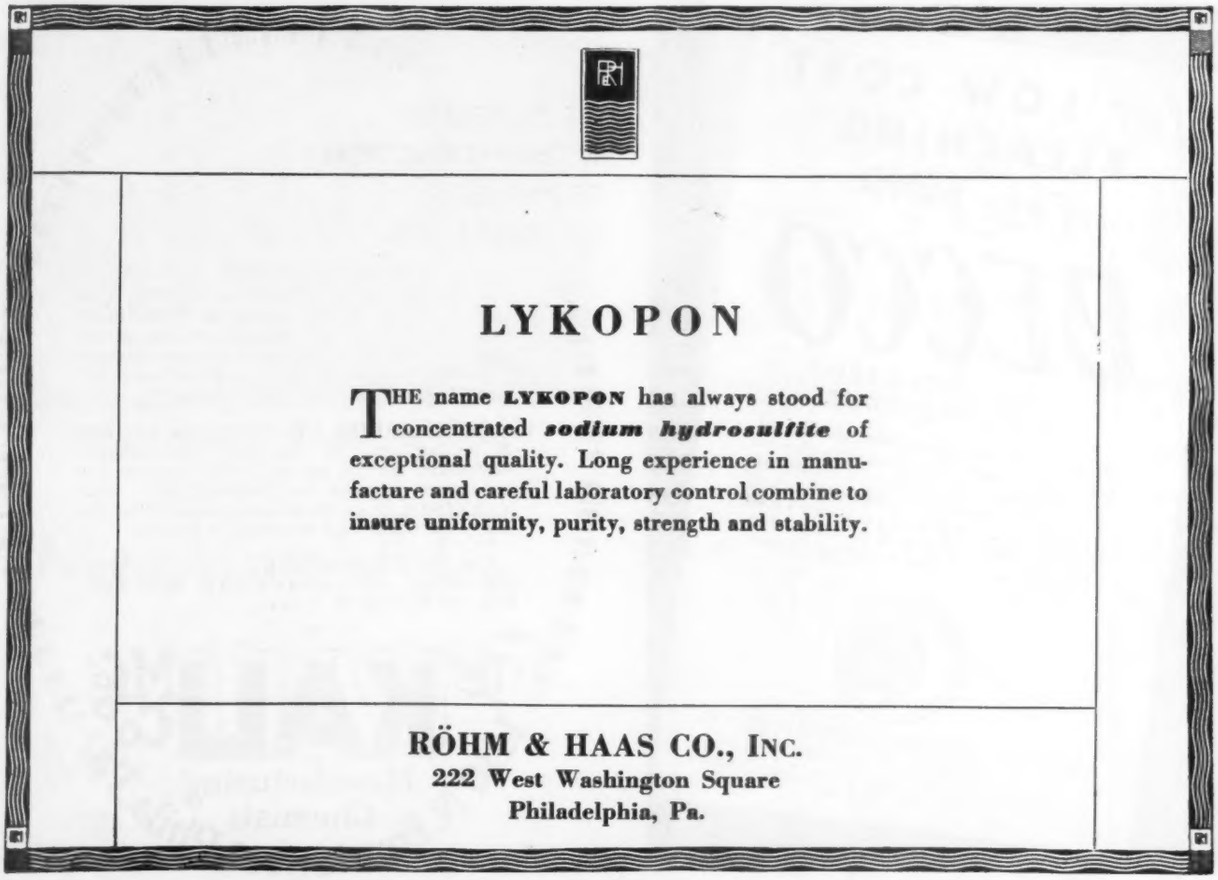
SPECIAL!
*Breakfast, 75 cents; Luncheon, One Dollar; Dinner, $1.50*

WALTON H. MARSHALL, *Manager*

*Park Avenue at Thirty-fourth St., New York.*







LYKOPON

THE name **LYKOPON** has always stood for concentrated ***sodium hydrosulfite*** of exceptional quality. Long experience in manufacture and careful laboratory control combine to insure uniformity, purity, strength and stability.

RÖHM & HAAS CO., INC.
222 West Washington Square
Philadelphia, Pa.

VICTOR MILL STARCH

"THE WEAVER'S FRIEND"

A *thin boiling* starch that is *highly* penetrative, carrying the weight *into the fabric* . . . . Assures 100% Production.

*Distributed By*

DANIEL H. WALLACE SOUTHERN AGENT GREENVILLE, S. C.

C. B. ILER, GREENVILLE, S. C. F. M. WALLACE, COLUMBUS, GA.
L. J. CASTILE, CHARLOTTE, N. C.

THE KEEVER STARCH CO. COLUMBUS, OHIO

*for* LOW COST BLEACHING *of any fabric*

BECCO

CONCENTRATED HYDROGEN PEROXIDE

Hundreds of mills throughout the United States have made this up-to-date discovery: that *Becco* Concentrated Hydrogen Peroxide is a short-cut to superior bleached goods at lowest unit cost . . . *Becco* Technical Service is prepared to show your plant the way . . . Write for full details.

BUFFALO ELECTRO-CHEMICAL CO.
BUFFALO, NEW YORK
Boston New York Philadelphia Chicago Charlotte Toronto Montreal

WE PIONEERED IN THE PRODUCTION OF PINE OILS TO BENEFIT YOU

If you have any problem that can be solved through the use of Pine Oils or their compounds, write to our Research Department and get the facts we can give you out of our long experience in our laboratory and through tests we have made in a practical way for textile plants all over the country.

Use *KALI KIER OIL* in both the kier and in boiling out. It has been outstandingly successful for 18 years. Also popular for the same purposes is *KALPIKIER*. Our *KALPINOL* is an ideal sulphonated Pine Oil for penetration and leveling of shades.

Use our *KALPISCOUR* for wool scouring and fulling, and our *ART SILK BOIL-OFF OIL* for boiling off rayon.

The KALI Mfg. Co.
Manufacturing Chemists
1410 N. Front Street, Phila., Pa.

"For Real Economy Secure The Best"

Over half a century of manufacturing products for the Textile Industry has given us a broad experience in producing products that insure Economy and Quality.

QUAKER
SULPHONATED TALLOWS

Our line of products is unlimited, while the location of our three plants insures prompt delivery to any section of the country.

Sulphonated Olive, Castor & Neatsfoot Oils, Penetrants, Finishes and Sanforizing Oils. Practical demonstrations with no obligation.

QUAKER CITY CHEMICAL CO.
PHILADELPHIA, PA.
KNOXVILLE, TENN. HAMILTON, ONT., CAN.

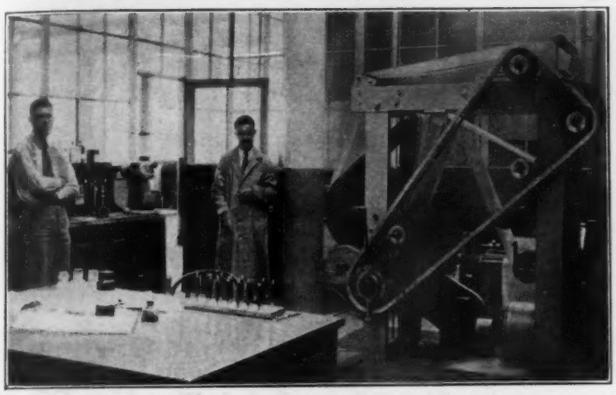
SOLVAY
TRADE MARK REG U S PAT. OFF.
PRODUCTS

Technical Service

We maintain in our Technical Service Department a staff of experts in Alkali. These men have studied the problems, and know the particular and individual needs of the various industries using Alkali. If you have a problem affected by soda ash, caustic soda or any other alkali, that is causing you anxiety, we will be pleased to have you correspond with SOLVAY SALES CORPORATION direct, or with the nearest branch office or distributor. We will, if necessary, gladly send a man who has specialized in your problem to assist you in working out a satisfactory solution.

SOLVAY SALES CORPORATION
*Alkalies and Chemical Products Manufactured by The Solvay Process Company*
61 BROADWAY, NEW YORK

SOUTHERN DISTRIBUTORS
Charles H. Stone, Charlotte, N. C.
Woodward Wight & Co., New Orleans, La.
J. T. Sudduth & Co., Birmingham, Ala.
Miller-Lenfestey Supply Company, Tampa, Miami and Jacksonville, Fla.
Burkart-Schier Chemical Co., Chattanooga, Tenn.
Paper Makers Chemical Corp., Atlanta, Ga.; Marrero, La.



*General View of Textile Laboratory*

# Meeting ALL Requirements

MAINTENANCE of high quality and uniformity is assured the textile trade by the Corn Products Refining Company's system of control laboratories. In the Textile Laboratory, there are machines designed to duplicate accurately the conditions met in a customer's plant.

Under the supervision of men trained in the textile industry itself, warp sizing, cloth printing and finishing are actually done *according to the methods used by the customer*—to further assure him that he is getting goods which are suited to his particular equipment and process.

We hope Textile Manufacturers will permit us to work with them in solving any problems they may encounter.

**CORN PRODUCTS REFINING COMPANY**

17 Battery Place New York City

Branch Offices

Boston, Mass. Greenville, S. C.

# Have YOU a Sizing or Finishing Problem?

SLASHING
**WEAVE WELL**
PRODUCTS

FINISHING
**FINISH RITE**
PRODUCTS

BASED on an experience of over a quarter of a century in selling sizing to the textile mills, with representatives having spent many years in practical textile manufacturing, and with a completely equipped laboratory and specially trained chemists, the Frank G. North, Inc., organization has been able to advise and cooperate with many mills on their sizing and finishing problems with material savings to the mills. We have these advantages to recommend us:

One of the most modernly equipped and economical plants for manufacturing sizing and finishing compounds in the country, located so as to render prompt service to Southern mills. Large enough to purchase crude materials at economical prices, with technical and practical knowledge to assure uniformly good quality. Small enough to avoid high overhead and to insure each mill's problems and requirements being given personal attention.

We are now serving over seventy-five representative mills throughout the South (names on request) and the number is increasing monthly. We will welcome the opportunity of consulting with you and demonstrating the superiority and economy of WEAVE WELL for sizing warps or FINISH RITE for finishing.

## FRANK G. NORTH INCORPORATED

Mortgage Guarantee Bldg.
Atlanta, Ga.
*Phone Main 3665*

Plant at
Marietta, Ga.
*Phone 250*

# SPRAY
## YOUR RAW STOCK
Dyed, Bleached or Natural Cotton
## WITH
# MINEROL

**The added lubrication makes the cotton Card, Draw and Spin *better*... reduces Dust and Lint.**

**MINEROL conditions the fibre and softens the natural coatings, so that the cotton reacts more readily to subsequent operations, such as ● Dyeing ● Bleaching ● Mercerizing.**

**BORNE SCRYMSER COMPANY**
Originators of the BRETON MINEROL PROCESS for CONDITIONING COTTON
17 BATTERY PLACE · NEW YORK

**MINEROL AIDS TEXTILE FINISHING**



# BOSSON & LANE, INC.

*Manufacturing Chemists*
*Established Jan. 1, 1895*

**Works and Office, Atlantic, Mass.**

**High Grade Castor Oil Products**
*Sulphonated-Saponified*

**Soluble Oil** — **Para Soap Oil**
**Turkey Red Oil** — **Castor Soap Oil**
**Soluble Pine Oil** — **B & L Bleaching Oil**

**PENTRALYN,**
**a superior assistant for Beam, Spool, Bobbin and Package Dyeing.**

**Bleach Softener CSO, Finishing Sizings and Softeners**

**VICTROLYN,**
**the economical assistant in warp sizing. Penetrating, Lubricating and wholly efficient.**

**B & L Bleachers' Bluings and Violet Tints**

*GOOD MONEY VALUES*
*-FREEDOM FROM WORRY*



# AN UP-TO-DATE PRINTING PLANT

equipped with modern machinery and a staff of competent workmen, solicits, thru this publication, a trial order on your printing needs.

We have built a reputation that is known over the entire South by our special attention to the minutest detail.

We are more than ready to answer any question that relates to your printing problems.

*Write us and let us quote you on anything from a postal card to a full bound book.*

**The A. J. Showalter Co.**
PRINTERS AND PUBLISHERS
DALTON GEORGIA



*Fully 25% of All Cotton Textile Spindles in the United States are Operated on the Loper System.*

**Ralph E. Loper Co.**
*INDUSTRIAL ENGINEERS*

*Specialists in Textile Costs Over 21 Years*
FALL RIVER, MASS. GREENVILLE, S. C.



## "Cotton Mill Machinery Calculations"

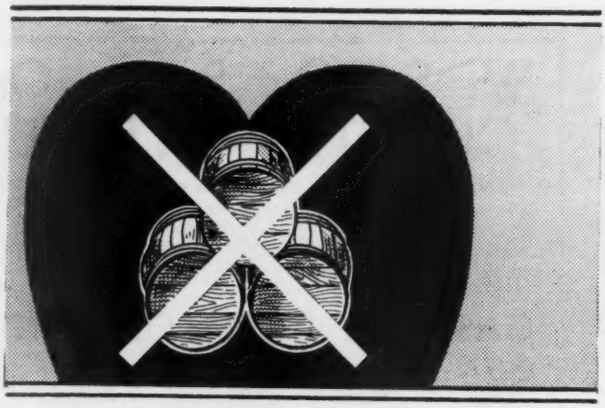
EVERY Textile Man should have these reference books. They cover in a detailed and thorough manner all calculations necessary to be made on any cotton mill machinery manufactured in the United States and constitute one of the best references on the subject obtainable.

These two volumes are illustrated with 45 diagrams and contain 21 reference tables.

As the value of a book lies in its contents and not in a fancy cover, we have put these two volumes out in a strong, serviceable binding. You can secure them in conjunction with a three-year subscription to COTTON.

*Write for circulars and full information.*

**COTTON**
Grant Bldg., Atlanta, Ga.



1 barrel of Caro-Gant replaces
3 barrels of Sizing Compound

HERE is the most efficient as well as economical and convenient sizing assistant that will assure you cleaner looms and higher quality fabrics.

Being 100% pure, with no water or inert vehicles, it goes further—1 barrel of Caro-Gant together with a small amount of tallow will replace 3 barrels of sizing compound. Here is the most uniform mixture of an adhesive colloid easily and quickly secured.

The surprising effectiveness of Caro-Gant will be demonstrated to you without obligating you in any way. Write

THE HART PRODUCTS CORP.
1440 BROADWAY
NEW YORK
N. Y.

hart

PRODUCTS
BASED ON RESEARCH

"WHATEVER EQUIPMENT WE'LL NEED, HADN'T WE BETTER GET IT NOW?"

MR. SUPERINTENDENT:

The financial heads of your mill are in a mood to purchase the rings and other equipment you may need. They know that equipment which is rising in value is better to hold than dollars. If your rings are worn, bring to the management's attention the fact that new DIAMOND FINISH rings mean improved product immediately, and are an excellent investment financially.

WHITINSVILLE (MASS.)
SPINNING RING CO.
Makers of Spinning and Twister Rings since 1873

FOR RAYON—FOR SILK

OILLESS MACHINES
produce clean yarn

If you don't use oil, you can't get oil spots. The Standard Atwood Winders, Twisters, 5B's and Redraws are now oilless. Atwood Oilless Machines require no oiling at any point for months at a time.

THE ATWOOD MACHINE COMPANY, STONINGTON, CONN., U. S. A.
Sales Offices: New York Wilkes-Barre, Pa. Stonington, Conn. Charlotte, N. C. Los Angeles, Cal.
ATWOOD MACHINES PRODUCE THE BULK OF AMERICA'S SILK AND RAYON YARNS

We Sell Our Brushes On QUALITY—Not PRICE!

Without quality there can be no repeat business . . . it's repeat business that counts.

Our prices are no higher than other reputable brush manufacturers.

GASTONIA BRUSH COMPANY,
GASTONIA, N. C.
*Manufacturers, Repairers, and Designers of Textile Brushes*

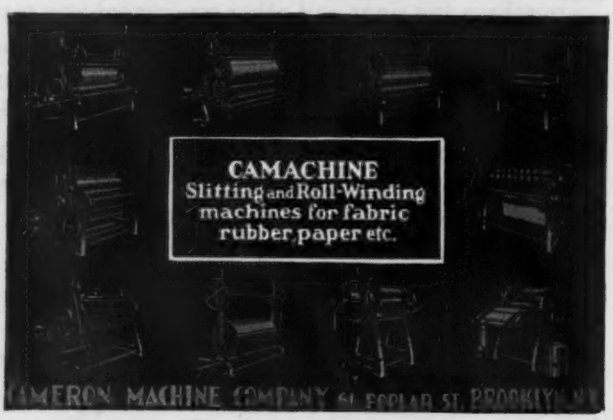
No-Glare Is Like an Umbrella Over Your Plant

NO-GLARE

A sky-blue liquid which when painted over windows or skylights keeps out all the glare, a lot of the heat and admits 94% of the light.

The Skybryte Co.
1929 E. 19th St. Cleveland, Ohio

HURLEY-JOHNSON CORP.
25 WALKER ST., NEW YORK
*SOLE AMERICAN AGENTS FOR*
JAMES KENYON & SON, LTD.
BURY, LANCASHIRE, ENGLAND
*Celebrated*
LAPPINGS and BLANKETS for PRINTING MACHINES
CLEARER, ROLLER and SLASHER CLOTHS.
*For Best results in Sanforizing use*
KENYON'S ENDLESS WOOLEN BLANKETS


CAMACHINE
Slitting and Roll-Winding machines for fabric rubber, paper etc.
CAMERON MACHINE COMPANY 61 POPLAR ST. BROOKLYN

The American Business Paper

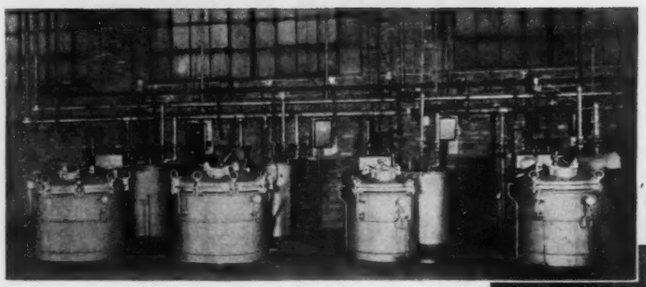
ONE of the vital reasons for the tremendous commercial development in the United States is the American business press. The American business man, manufacturer, wholesaler or retailer, is presented each month with a veritable encyclopedia of information in his chosen field. To the schools of America, and the daily press, as instruments of democratic education must be added our business press with its specialized service.

*Consider these features of well-conducted business papers, and their influence on the development of business technique:*

NEWS which, in the business paper, means the presentation of all angles of controversial matters; the rapid dissemination of information concerning shifts proved products; the spread of knowledge concerning shifts in personnel in an industry, so important to all concerned; the exhaustive studies of conditions and trends which show in what directions industry is moving; the co-relation of specific developments in an industry with general movements in business; the technical information which, in any one issue of a competent business paper, might amount to as much as an individual could hope to gather in a lifetime; and over and above all this detailed material is the editorial comment, sifting, comparing, commenting, searching out the basic elements, organizing the mass of news and information into compact, usable generalizations.

**The American Business Paper is one of the evidences of America's willingness to learn. Like its widespread system of democratic education, the Business Paper serves an industry's need for impartial information, placing at each reader's command the same accumulation of data, for such use as he may make of it.**

# Obermaier



***Package Dyeing and Drying in a Complete Cycle***

**The packages are dyed and dried on the same material carriers—eliminating hydro-extractors and labor.**

**Packages remain clean and in their original forms.**

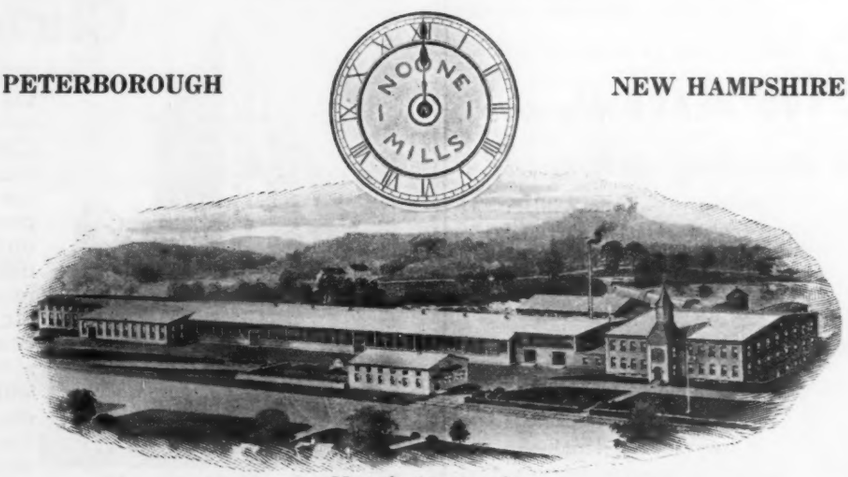
**The same system applies to Roving, Slubbing and Beams.**

**AMERICAN OBERMAIER CORP., 11-20 Forty-Ninth Ave., Long Island City, N.Y.**

# The Joseph Noone's Sons Company

**A. ERLAND GOYETTE, Proprietor**

**PETERBOROUGH** **NEW HAMPSHIRE**




**Manufacturers of**

## Roller—Clearer—Slasher Cloths

Experience of 100 years behind the selection of most suitable grades of stock for proper blending and manufacture of these cloths.

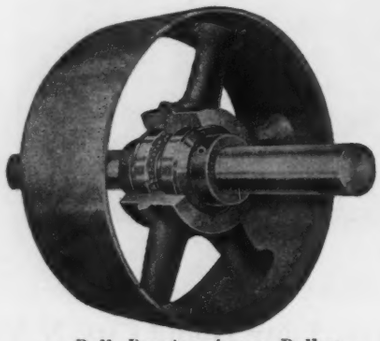
*Insist on Noone's Cloth*

## Wm. R. Noone & Co., Selling Agents

**A. T. MALONE, Mgr., 105 Washington St., Boston Mass.**

*Southern Office: 11 James Street, Greenville, S. C.*

*Blower and Fan Bearings*



*Ball Bearing Loose Pulley*

# BALL BEARING
## TRANSMISSION EQUIPMENT
*using*
## Fafnir Ball Bearings

Drop Hangers — Post Hangers
Pillow Blocks — Loose Pulleys
Blower and Fan Boxes
Flange and Cartridge Units
Spinning and Twister Frame Boxes
and
Special Applications

*(Write for our Catalogue No. 11)*

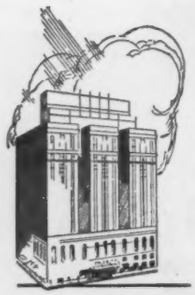
## GOLDENS' FOUNDRY & MACHINE CO.
Columbus Georgia

*Also Manufacturers of*

Pulleys
Rope Sheaves
V-Belt Sheaves
Size Kettles
Continuous Dyeing Machines
Raw Stock Dyeing Machines
Cloth Inspecting Machines
Cotton Mill Castings

## ...HAVE YOU HEARD *the one about the traveling salesman?*

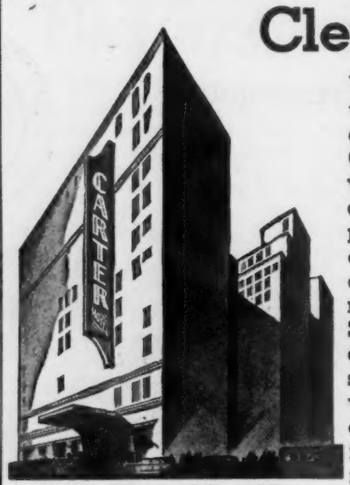
He went to bed at the William Penn and slept twenty years! Well, maybe that is a little exaggerated. But anyway, the beds at Pittsburgh's number one hotel are so comfortable you don't ever want to get up. The food in the four famous restaurants is equally exceptional, and the prices reasonable. Quiet, well-furnished rooms, $3.50 single; $5.00 double, all with bath.



1600 ROOMS . 1600 BATHS

## HOTEL WILLIAM PENN
PITTSBURGH, PENNA.

## When You Come to Cleveland



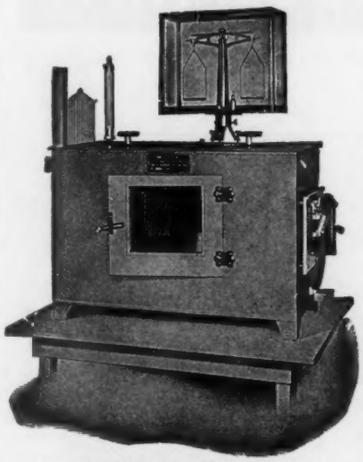
*The Carter Hotel, in the heart of Cleveland is conveniently located close to leading department stores, theatres, banks and transportation terminals.*

**Room Rates Begin at $2.50**

When next you visit Cleveland come to the New Carter Hotel. A warm welcome awaits you—prompt, courteous service and delicious food at reasonable prices. Six hundred large, comfortable outside rooms each with private bath and circulating ice water. Exceptional facilities for conventions and sales meetings. Personalized management.

## The CARTER HOTEL
PROSPECT NEAR EAST NINTH
CLEVELAND, OHIO
WILLIAM T. CRUSE, Manager

# EMERSON
## TEXTILE CONDITIONING OVENS



*EIGHT BASKET OVEN*
*Baskets 3" x 3" x 6" deep.*

Our various types of ovens are used extensively for determining the moisture in Wool, Cotton, Silk or Rayon, both raw materials and materials in process.

For different branches of the Textile Industry we make different types of Conditioning Ovens equipped with baskets to fit the work, whether bulky samples of wool, cotton, or silk, or small samples of fine yarn.

*for Conditioning Oven Information Write to*

**EMERSON APPARATUS CO.**

174 Tremont St.
MELROSE, MASS.

**Cotton Card Grinders.**
**Woolen and Worsted Card Grinders.**
**Napper Roll Grinders.**
**Calender Roll Grinders.**
**Shear Grinders.**

**B. S. ROY & SON CO.**
*Established 1868*
**Worcester, Mass., U. S. A.**

**ROY TEXTILE GRINDING MACHINERY**

# Keep trouble outside

**"The assurance that our plant will be secure is almost as valuable as the protection afforded by our Cyclone Fence. It was erected several years ago to cut down the unnecessary losses we were experiencing from petty thefts. The fence looks almost the same as it did the day it was erected and will undoubtedly continue to prevent losses from theft, fire or other disturbances for many years to come. It's the cheapest protection you can buy when you consider its long life.**

**"The material in our outside storage yard is safe at all times. We have absolute control of entrances and exits. And, when the trouble started across the street our fence proved its real value, not even our lawn was disturbed."**

**An accurate estimate will convince you of the economy of CYCLONE Property Protection Fence, write today, there will be no obligation to you. Erection may be made by our factory-trained crews. Or, your own men may handle the erection under the direction of one of our superintendents if you desire. Write for complete information; address Dept. C.**

**CYCLONE FENCE COMPANY**
**General Offices: Waukegan, Ill.**
**BRANCHES IN PRINCIPAL CITIES**
*SUBSIDIARY OF UNITED STATES STEEL CORPORATION*
*Pacific Coast Division:*
**Standard Fence Company, General Offices: Oakland, Calif.**
*Cyclone is not a "type" of fence but fence made exclusively by Cyclone Fence Company and identified by this trade-mark.*

**Cyclone Fence**
REG. U.S. PAT. OFF.

# plus value ★

## *at minimum cost*

1. Every room an outside room with private bath; circulating ice water.
2. Delicious food by the South's best chef.
3. Located just out of city's noisy clatter.
4. Five minutes by taxi to all railroad stations; any part of business district.
5. Music by Pete Underwood's Orchestra.
6. Golfing privileges at leading clubs.
7. Only 4 blocks to Tech's Grant Field.
8. Dances every Wednesday and Saturday.
9. Completely equipped for large and small conventions.
10. "Headquarters" for salesmen and traveling executives.
11. Cosmopolitan in scope of service and attractions.
12. One day laundry service without extra cost.
13. A guarantee of guest satisfaction. Above all, comfort and relaxation.

**RATES:**
Single — $3 $4 $5
$4.50 $5.50 $6.50
Two persons to room, double bed.
$5 $6 $7
Two persons to room, twin beds.

**DINING ROOM:**
Breakfast, from 35c.
Luncheon, from 75c.
Dinner, from $1.00.

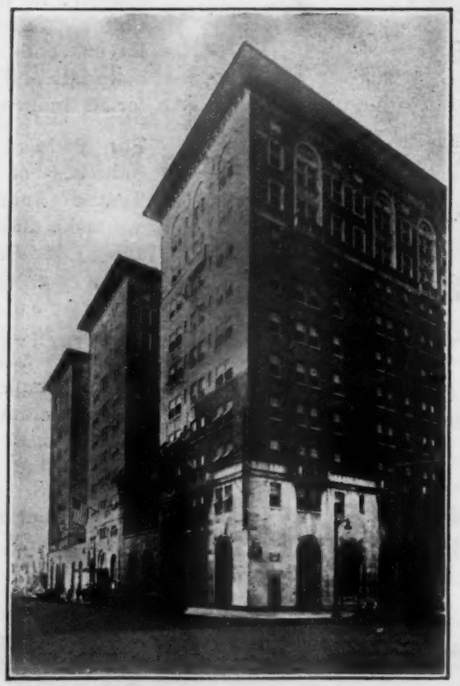
*Write for free football dope book.*

**Atlanta**

**BILTMORE ★ HOTEL**

*"The South's Supreme Hotel"*

# COMING TO PHILADELPHIA?



**A SYMBOL**

**OF HOSPITALITY**

When you visit Philadelphia make **HOTEL PENNSYLVANIA** your home . . . You will find its location convenient—ten minutes to the business section . . . away from congestion and noise. . . . Known the world over for its hospitality . . . food that satisfies.

**600 ROOMS, Each With Bath**
**From $2.50 Single, $4.00 Double**

**HOTEL PENNSYLVANIA**

**39th and CHESTNUT STREETS**
**PHILADELPHIA**

# Safe *and* Dependable!

**NATIONAL SAFETY COUNCIL, INC., PLACES CLIPPER LACING EQUIPMENT FIRST ON 1933 HONOR ROLL**

MISCELLANEOUS METAL PRODUCTS INDUSTRIES (Continued)
1933 Injury Records of Individual Industrial Units
THE RECORD
CLIPPER BELT LACER COMPANY. WORKED MORE HOURS WITHOUT A DISABLING INJURY THAN ANY OTHER SMALL UNIT WITH A PERFECT 1933 RECORD - 135,000.

**According to the Metal Products Industries report of 1933 the Clipper Belt Lacer Company has worked more hours without a disability injury than any other unit with a perfect 1933 record. Clipper Hooks, of course, were used throughout the plant. This is just one indication of the safety of Clipper equipment.**

*Clipper Hooks are unsurpassed in quality and durability. Clipper Carded Hooks are safest to handle.*

CLIPPER BELT LACER COMPANY, Grand Rapids, Mich.

**Clipper**
*Lacing Equipment*

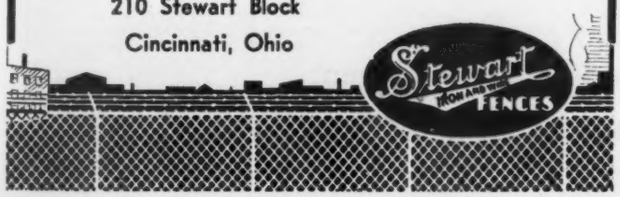
IS LABOR
# *Restless*
IN YOUR LOCALITY?

Unrest — secret meetings — radical huddles — property damage—VIOLENCE! They can easily result from labor unrest—and you can easily guard against property damage by the installation of Stewart Non-climbable Chain Link Wire Fence. The trouble may not originate in your own plant—but it can spread—but only to your boundaries if you have fenced properly. Fencing not only protects you from present disagreeable situations but it stands as a permanent watchman for years to come. Write for the new Stewart catalog—and the address of your local Stewart sales and erection office—Fence pays for itself many times over—

The STEWART IRON WORKS CO., Inc.

210 Stewart Block

Cincinnati, Ohio



HELLO JIM. I'M CALLING TO FIND OUT IF THOSE GRATON & KNIGHT 50-TYPE PICKERS HAVE WORKED OUT SATISFACTORILY FOR YOU ?
THEY ARE THE BEST I HAVE EVER USED, BILL. THEY LAST LONGER, CHANGE QUICKER, AND FIT BETTER. YOU CAN'T GO WRONG IN USING THEM.

# Experience Proves They Save Money

**Hundreds of mill men, like Jim, are using Graton & Knight 50 Type Pickers. Their experience has proved they are better.**

**The three thicknesses are all accurately maintained.**

**G & K 50-7/32" thick loop**
**G & K 55-3/16" thick loop**
**G & K 60-5/32" thick loop**

U. S. Pat. 1904316

**Graton & Knight distributors located in every principal textile center carry complete stocks.**

GRATON AND KNIGHT

## Graton & Knight Company

Worcester, Mass.

**Makers of Research Leather Belting and a Complete Line of Textile Mill Leathers**

*There is Nothing like*

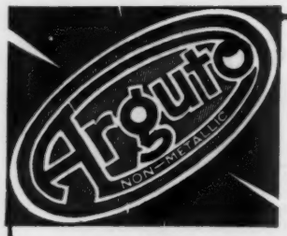
REG. U. S. PAT. OFF.

**CALF**

***for Roller Covering***

**R. NEUMANN & CO.**

**Hoboken, N. J.**




20 years without a drink—

"First bought 'Arguto' bearings 25 years ago . . . still buy them because they're alright."

—unsolicited testimonial

ARGUTO OILLESS BEARING CO.

Wayne Junction, Philadelphia, Pa.

# TRADING POST EXCHANGE

**BUSINESS—EMPLOYMENT—EQUIPMENT—PROFESSIONAL CARDS—OPPORTUNITIES**

*DISPLAY RATES*

Rates are net, payable in advance each month. No commissions or discounts. Page is 3 columns, 10 inches deep—30 inches to page. Space measured by even inch vertically by 1, 2 or 3 columns in width. Column width 2¼ inches. Rates based on the total space used in one year.

| | Per Inch | | Per Inch |
|---|---|---|---|
| 1 inch | $5.00 | 15 inches | 4.20 |
| 3 inches | 4.80 | 20 inches | 4.00 |
| 6 inches | 4.60 | 50 inches | 3.80 |
| 10 inches | 4.40 | 100 inches | 3.60 |

*UNDISPLAYED*

Advertisements set "Want ad" style. Positions wanted .05 word per insertion. Minimum charge $1.00 per insertion. Cash with order. All other classifications .10 word per insertion. Minimum charge $2.00 per insertion. Advertisements of equipment, for sale, rent or wanted and professional cards are accepted at display rate only.

Box number addresses care of COTTON, Grant Bldg., Atlanta, Ga., count as eight words.

**Products Wanted**

One of our clients, a New England manufacturer with a sales organization contacting textile mills throughout the world, desires to manufacture and sell accessory of merit, preferably covered by strong patents, and applicable to existing looms or other textile machinery. Strictest confidence observed.

**William L. Fletcher**

8 Newbury Street,
Boston

**BETTER TEXTILE MACHINERY AT A GREATER SAVING**

With 25 years experience with largest textile machinery builders, designing, engineering and selling—with knowledge of how to secure machinery at the greatest savings and how to save time and expense in shipping—We are able to render our clients a service they cannot secure elsewhere. Tell us what you want.

GEORGE F. LANGEVIN, 20-22 Howe Bldg., LOWELL, MASS

*Specializing in Textile Machinery for Relocation.*

**WANTED**

Salesman by large converters of starches to sell these products to the textile and paper trade. Must be thoroughly familiar with this line. Reply Box 127, care of COTTON, Grant Bldg., Atlanta, Ga.

**Paul B. Eaton**

PATENT LAWYER

1408 Johnston Bldg., Charlotte, N. C.
514 Munsey Bldg., Washington, D. C.
Former Member Examining Corps
U. S. Patent Office

**"Cotton Mill Machinery Calculations"**

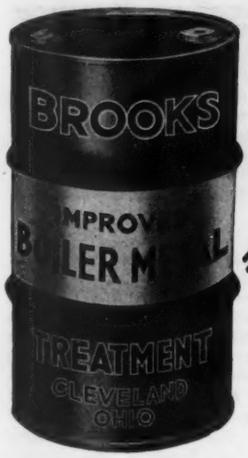
EVERY Textile Man should have these reference books They cover in a detailed and thorough manner all calculations necessary to be made on any cotton mill machinery manufactured in the United States and constitute one of the best references on the subject obtainable. The two volumes are illustrated with 45 diagrams and contain 21 reference tables. Strong, serviceable binding. You can secure them in conjunction with a three-year subscription to COTTON.

**Do You Want to Sell It?** Probably you, like many other mills, have some equipment which you have taken out or are thinking of taking out and replacing with new equipment. Why not dispose of this second-hand machinery at a profit? COTTON is read by thousands of cotton mills that are hardly touched by Northern journals.

**You Can Sell Your Second-Hand Equipment**

to these mills through advertising in the Trading Post Exchange of COTTON. Such advertising produces results at small cost—why not try it out and get that second-hand equipment off your hands in a profitable way? Tell us what you have for sale and let us insert an advertisement.

**Cotton, Grant Bldg., Atlanta, Ga.**




## For Real Economy in Your Boiler Room

*Less Coal*
*Less Repairs*

Your boiler room is probably the most wasteful department in your mill if your boilers are not kept free of boiler scale. Your engineer doubtless does the best he can to keep down scale but mechanical devices, water treating chemicals, etc., cannot keep scale out.

Brooks Improved Boiler Metal Treatment is a certain and sure, non-chemical, mechanical-acting scale remover which leaves a film over the clean metal to which further scale will not adhere, and which prevents corrosion and pitting. Write today for our 60-day trial offer.

**The Brooks Oil Co.**
CLEVELAND OHIO

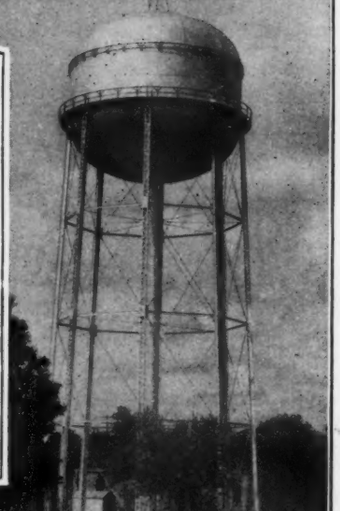
NRA MEMBER U.S. WE DO OUR PART



# COLE
## TANKS *and* TOWERS

COLE'S reputation for correct design and construction is known all over the country. Our engineering department, with many years of experience, will be glad to submit designs to meet any requirement for

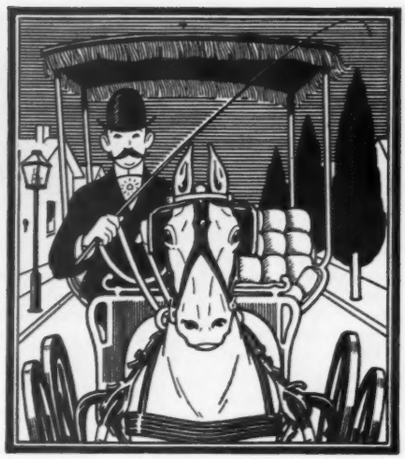
*TANKS TOWERS*
*BOILERS KIERS*
*STAND PIPES*
*SMOKE STACKS*
*ACID TANKS*
*VATS*
*STORAGE BINS*
*KETTLES*
*ETC.*



**D. COLE MANUFACTURING CO.**
NEWNAN *EST. 1854* GEORGIA
*FABRICATORS OF STEEL AND ALLOY STEEL PLATE*



# GOING PLACES ?



This antiquated rig would get you there . . . but neither as swiftly nor as conveniently as a modern motor car.

Hand mopping might get your mill clean . . . but neither as speedily nor as economically as a modern *FINNELL* Scrubber.

The combination illustrated below scrubs the floor and in the same operation picks up the dirty water. Gets the whole floor clean and dry in a hurry. Reduces the possibility of slipping on wet floors.

There are other sizes and types of *FINNELL* . . . small ones to get into the narrow alleys, close up to the machinery. A right size for any sized mill.

*Demonstration free.* Representatives everywhere. For free demonstration write or wire *FINNELL SYSTEM, INC.*, 1310 East Street, Elkhart, Indiana. Canadian Distributor: Dustbane Products, Ltd., 207 Sparks Street, Ottawa, Ontario.

NRA MEMBER U.S. WE DO OUR PART

# FINNELL

EST. 1906

**ELECTRIC FLOOR SCRUBBER—POLISHER**

# Advertisers' Index


### A

Aberfoyle Mfg. Co. .....134
Abbott Machine Co. ..... 4
Acme Steel Co. ..... 14
Akron Belting Co. .....124
Aldrich Machine Works ..... 18
Alemite Corp. ..... 32
Allis-Chalmers Mfg. Co. ..... 22
American Enka Corp. .....151
American Mutual Liability Insurance Co. .....123
American Obermaier Corp. ...163
Ammon, Inc., Edw. R. .....150
Anderson, Clayton & Co. ....112
Arguto Oilless Bearing Co. ...168
Arkansas Co., Inc. .....148
Armour & Co. ..... 50
Armstrong Cork & Insulation Co. ..... 79
Arnold, Hoffman & Co., Inc. .. 42
Atlanta Biltmore Hotel .....166
Atlanta Brush Co. .....124
Atlanta Envelope Co. .....120
Atlanta Harness & Reed Mfg. Co. .....110
Atwood Machine Co. .....162

### B

Barber-Colman Co. ..... 93
Boger & Crawford .....146
Borne Scrymser Co. .....160
Bosson & Lane, Inc. .....160
Brinton Co., H. .....149
Bristol Co. ..... 28
Brooks Oil Co. .....169
Brown Co., David ..... 8
Buffalo Electro - Chemical Co., Inc. .....158
Butterworth & Sons Co., H. W. ..... 3

### C

Cameron Machine Co. .....162
Campbell & Co., John ..... *
Champion Fibre Co. ..... 27
Ciba Co. ..... *
Clinton Co. ..... 98
Clipper Belt Lacer Co. .....167
Cole Mfg. Co., R. D. .....169
Corn Products Refining Co. ..159
Crane Company ..... 34
Crompton & Knowles Loom Works ..... 7
Cyclone Fence Co. .....165

### D

Dayton Rubber Mfg. Co. ..... 25
Dixie Mercerizing Co. ..... *
Draper Corporation ..... 1
Dronsfield Bros., Ltd. ..... *
Dupont de Nemours & Co., E. I., Dyestuffs Division ..... 31
Dupont de Nemours & Co., E. I., Paint and Varnish Division ..... 39
Durant Mfg. Co. .....124

### E

Eaton, Paul B. .....168
Emerson Apparatus Co. .....165
Emmons Loom Harness Co. ...123

### F

Fafnir Bearing Co. ..... 40
Fidelity Machine Co. .....155
Finnell System, Inc. .....169
Fletcher, Wm. L. .....168
Foster Machine Co. ..... 12
Foxboro Co. ..... 96
Franklin Process Co. ..... .....Inside Front Cover

### G

Gardinol Corporation ..... 48
Gastonia Brush Co. .....162
Gates Rubber Co. .....122
General Dyestuff Corp. ..... *
General Electric Co. .....102
General Electric, Nela Park .. 24
General Electric Vapor Lamp Co. ..... 17
Gill Leather Co. .....112
Gilman Paint & Varnish Co. ..110
Goldens' Foundry & Mch. Co...164
Goodrich Rubber Co., B. F. ... .....80 and 81
Goodyear Tire & Rubber Co. .. 77
Grasselli Chemical Co. ..... 52
Graton & Knight Co. .....167

### H

Hart Products Corp. .....161
Henderson Fdry. & Mach. Works ..... 10
Hercules Powder Co., Inc. ... *
Hermas Machine Co. ..... 11
Hinde & Dauch Paper Co. ... 89
Hotel Atlanta Biltmore .....166
Hotel Carter .....164
Hotel Pennsylvania .....166
Hotel Vanderbilt .....156
Hotel William Penn .....164
Houghton & Co., E. F. ..... 23
Howard Bros. Mfg. Co. ..... 21
Hurley-Johnson Corp. .....162
Huyck & Sons, F. C. .....124
Hyatt Roller Bearing Co. .... 37

### I

Industrial Dryer Corp. .....128
Industrial Rayon Corp. ..... 56
International Nickel Co. .... 47

### J

Jackson Moistening Co., Inc... 98
Jacobs Graphic Arts Co. ..... 38
Johnson Bronze Co. ..... 98
Johnson, Chas. B. .....125

### K

Kali Mfg. Co. .....158
Keever Starch Co. .....157

### L

Langevin, George F. .....168
Laurel Soap Mfg. Co. .....155
Lawrence Leather Co., A. C. .. .....94 and 104
Link Belt Co. ..... 30
Loper Co., Ralph E. .....160

### M

Manhattan Rubber Mfg. Co. Division .....Front Cover
Merrow Machine Co. .....125
Mill Devices Co. ..... 19
Moccasin Bushing Co. ..... 98
Morehead Mfg. Co. ..... *

### N

National Oil Products Co. .... *
Neumann & Co., R. .....168
New Departure Mfg. Co. ..... 43
New York & New Jersey Lubricant Co. .....117
Noone & Co., Wm. R. .....163
North, Inc., Frank G. .....159

### O

Old Dominion Box Co. .....155
Onyx Oil & Chemical Co. .... 46

### P

Pearson & Sons Co., Jos. T...155
Permutit Co. ..... 44
Phila. Felt Co. .....122
Phila. Quartz Co. .....155
Pioneer Atlanta Co., Inc. .....116
Power Transmission Council... .....84 and 85
Powers Regulator Co. ..... .....36, 111 and 121
Proctor & Schwartz, Inc. .....116

### Q

Quaker City Chemical Co. ...158
Quissett Mills .....152

### R

Railway Express Agency, Inc..113
Reeves Pulley Co. .....119
Reliance Electric & Mfg. Co... *
Republic Rubber Co. ..... 29
Republic Steel Corp. ..... 54
Rhoads & Sons, J. E. ..... 49
Rockwood Mfg. Co. ..... 35
Rohm & Haas Co., Inc. .....157
Roy & Son Co., B. S. .....165
Royce Chemical Co....Back Cover
Royersford Needle Works, Inc..142

### S

Saco-Lowell Shops ..... *
Sargent's Sons Corp., C. G. .. 15
Scholler Bros., Inc. .....153
Scott & Williams, Inc. .....127
Seydel-Wooley Co. .....124
Sherwin-Williams Co. ..... 33
Showalter Printing Co., A. J...160
S. K. F. Industries, Inc. .... 37
Skybryte Co. .....162
Solvay Sales Corp. .....158
Sonoco Products Co. ..... 6
Standard Brands, Inc. ..... 53
Standard, Coosa, Thatcher Co..150
Steel Heddle Mfg. Co. .....118
Stein, Hall & Co., Inc. ..... 45
Stewart Iron Works Co., Inc...167

### T

Taylor Instrument Companies. 41
Terrell Machine Co. .....120
Texas Co. ..... 2
Textile Banking Co. ..... 83
Textile Machine Works .....152
Three-In-One Oil Co. .....115
Torrington Co. .....137 and 138

### U

Union Special Machine Co. ... *
Universal Winding Co. ..... 9
U. S. Bobbin & Shuttle Co.... 13
U. S. Gutta Percha Paint Co... ..... 90 and 91
U. S. Ring Traveler Co. ..... 16

### V

Veeder-Root, Inc. ..... .....Inside Back Cover
Viscose Co. .....100

### W

Wallerstein Co., Inc. .....108
Want Ads .....169
Waterman, Currier & Co. ....153
West Point Foundry & Mch. Co. ..... 20
Whitin Machine Works ..... 5
Whitinsville Spinning Ring Co. 161
Wildman Mfg. Co. .....130
Williams & Sons, I. B. ..... 26
Willcox & Gibbs Sewing Machine Co. .....140
Winslow Bros. & Smith Co....106
Wolf & Co., Jacques ..... 51
Wright Co. .....118

# 20,000 Veeder-Root COMPRESSION* CLAMPS ALREADY IN USE

## *35 to 50% Savings in Pick-Counter Installation Costs*

More than 20,000 Veeder-Root Compression Clamps have been installed in mills throughout the country since they were put on the market a few months ago.

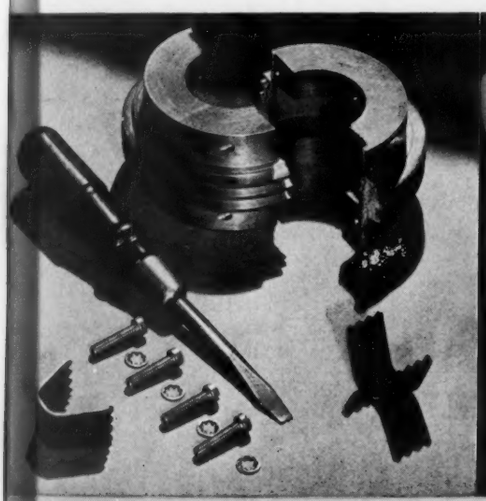
Mill owners report a saving of from 35 to 50 per cent in pick counter installation costs because these clamps are so easily and quickly installed . . . and because they eliminate drilling and weakening of the loom-shaft.

The Compression Clamp is another accomplishment of Veeder-Root engineers . . . the same men who have been responsible for every important development in pick counters since they designed, built and installed the *first* one 26 years ago.

Look at the pictures below and read how simple the installation of the Veeder-Root Compression Clamp really is . . . then you'll see how these clamps save so much time and money. And you'll understand why the demand for them has been so great.

Write to our nearest office. The Veeder-Root man in your territory will get in touch with you at once and arrange a demonstration.

★*United States Letters Patent Pending*



**1** A screw driver, two Veeder-Root Compression Clamps and screws—all that are needed to securely lock the drive worm of a Veeder-Root pick counter to a loom shaft. Quickly and easily attached. Eliminates drilling and weakening the shaft at point of contact.

**2** Put a small amount of heavy cup grease in the cored recess of the worm and push each clamp down into position. The grease holds the clamps in place while the worm halves are placed on the shaft.

**3** Turn down evenly the four holding screws—each with a lock washer under its head. The Compression Clamps spread, the teeth bite into the shaft and lock the worm firmly in place. The job is done and ready for the housing. No fuss, no bother.

# VEEDER-ROOT INC.

HARTFORD, CONN. GREENVILLE, S. C.

BOSTON PHILADELPHIA MONTREAL LONDON

BUILDERS OF COUNTING DEVICES SINCE 1878

Finish
. . . with
VELV-O-RAY CL
Superb effects! • A soft, thin "drapey" hand assured . . . to fabrics of acetate, Celanese and cotton.
VELV-O-RAY CL • is a 75% Oil which, in the dyebath, tones down the harshness of synthetic fibres, reducing their naturally brittle characteristics and producing a delightfully soft texture.
VELV-O-RAY CL • provides a matchless finish for cottons and intermixed fibres, thru its deep penetration and fine leveling properties.
Treatments by VELV-O-RAY CL • overcome the artificial feel, common to rayons, acetates and mixtures. They leave the goods soft and silky, give superior drape and act without stickiness . . . without evidence of rancidity.
VELVORAY
REG. U. S. PAT. OFF.
VELV-O-RAY CL . . . for rayon, Celanese, cotton and mixtures.
VELV-O-RAY No. 1 . . . for silks . . . pure dye or weighted.
Dyes by NATIONAL DYEING AND PRINTING CO.
ROYCE CHEMICAL COMPANY
Chemical Manufacturers
• CARLTON HILL, NEW JERSEY • NEW ENGLAND REPRESENTATIVES: RICHARD HAWORTH, 28 FOUNTAIN ST., PROVIDENCE, R. I.